SEPTEMBER 26, 1942

24421 18332

THE LANCET

Offices: 7, ADAM STREET, ADELPHI, W.C.2.

Telegrams: LANCET, RAND, LONDON. **Telephone:** TEMPLE BAR 7228 and 7229.

No. XIII OF VOL. II., 1942. LONDON, SATURDAY, SEPTEMBER 26, 1942 Pp. 56.—Price 1s.
No. 6213. VOL. CCXLIII. Founded 1823. PUBLISHED WEEKLY. Registered as a Newspaper. Inland £2 2s. Annual Subscription: Abroad 16s.

The Library Received NOV 8 - 1942 Copy

The new B.D.H. Tonic

VALOGEN

Trade Mark

Valogen provides all the members of the Vitamin B group contained in yeast, together with iron, copper, cobalt and manganese. It is an effective substitute for Livogen, the manufacture of which is suspended for the duration of the war.

Sample on request

THE BRITISH DRUG HOUSES LTD. LONDON N.1

OXFORD MEDICAL PUBLICATIONS

SEE PAGE 2

DISEASES OF THE THYROID GLAND
WITH SPECIAL REFERENCE TO THYROTOXICOSIS.
By CECIL A. JOLL, M.S., B.Sc., F.R.C.S. (Eng.).
Crown 4to: Fully Illustrated. £3 3s. net.
Revista de Libros: "This book is the best clinical treatise which we possess to-day on the pathology of the thyroid. . . . The excellence of the text is generally enhanced by the illustrations."
William Heinemann (Medical Books) Ltd., 99, Great Russell-street, London, W.C.1.

PROBLEMS OF
ANÆSTHESIA
IN GENERAL PRACTICE
By D. H. LUKIS, M.D., B.S.Lond.,
Late Hon. Anæsthetist, South London Hospital; late Clinical Assistant, Ear, Nose, and Throat Department, Queen's Hospital for Children; Hon. Medical Officer, Kingston Victoria Hospital.
Demy 8vo. 7s. 6d. net (postage extra). 158 + vi pages.
Hodder & Stoughton Ltd., 20, Warwick-square, E.C.4.

Pp. 328 + xii. 12s. 6d. net.
INTRODUCTION TO
DISEASES OF THE CHEST.
By JAMES MAXWELL, M.D. (Lond.), F.R.C.P. (Lond.).
Hodder & Stoughton Ltd., 20, Warwick-square, E.C.4.

PROGNOSIS. VOLS. ONE AND TWO
Price 10s. 6d. each net (postage 7d. each extra).
Companion Volumes to the "Modern Technique in Treatment" and "Clinical Interpretation of Aids to Diagnosis" Series.
The 124 articles of the series have been collected in book form in two volumes, which are fully indexed under titles, authors, and broadly classified into groups to facilitate quick reference.
The Lancet Limited, 7, Adam-street, Adelphi, London, W.C.2.

Free to the Medical Profession on request. Cloth bound Ed. 5s.
ARTIFICIAL LIMBS.
"SOLVITUR AMBULANDO."
A Symposium on Prosthetic Achievement.
Pp. 72. 37 Coloured Plates.
"I congratulate you on this interesting, instructive, and artistic production. I consider it to be a very great addition to my library."—M.B., Ch.B., F.R.C.S.
J. E. Hanger & Co., Ltd., 7, Roehampton House, Roehampton, S.W.15.

OESOPHAGEAL OBSTRUCTION.
ITS PATHOLOGY, DIAGNOSIS AND TREATMENT
(including four chapters on Cancer of the Œsophagus).
By A. LAWRENCE ABEL, M.S. Lond., F.R.C.S. Eng.,
Senior Assistant Surgeon, Royal Cancer Hospital.
Pp. 245. 132 Illustrations. 2 Col. Plates. 30s. net.
"Masterful and complete. . . . Cannot be too highly praised."
—SURG. GYN. AND OBSTET. JOUR.
Oxford University Press, Amen House, London, E.C.4.

ANATOMY IN THE LIVING MODEL.
By DAVID WATERSTON, M.A., M.D., F.R.C.S.E., F.R.S.E.,
Bute Professor of Anatomy at the University of St. Andrews.
276 pages. 74 Illustrations. 16 Coloured Plates. Price 15s. net; postage 9d.
". . . can be read and re-read by the student, general practitioner, the surgeon and physician."
ST. BARTHOLOMEW'S HOSP. JOUR.
Hodder & Stoughton Ltd., 20, Warwick-square, E.C.4.

THE CLINICAL INTERPRETATION OF AIDS TO DIAGNOSIS.
Vols. I and II. Price 10s. 6d. each. Postage extra.
Volume I.—"Each of the 45 Sections included in the book is contributed by an experienced worker. . . ."
Volume II.—"We may say that the success of the first volume is here repeated. . . ."—BRITISH MEDICAL JOURNAL.
"Physicians and surgeons cannot afford to omit the knowledge here outlined. . . ."—BIRMINGHAM MEDICAL REVIEW.
The Lancet Limited, 7, Adam-street, Adelphi, London, W.C.2.

NOW READY

The Dental Treatment of MAXILLO-FACIAL INJURIES

W. KELSEY FRY, P. RAE SHEPHERD, ALAN C. MCLEOD, GILBERT J. PARFITT

With a Foreword by PROFESSOR F. R. FRASER

268 pages, profusely illustrated, **16s.** net; postage 7d.

Of all Booksellers

BLACKWELL

Cold Prophylaxis with Serocalcin

Immunity in four cases out of five

The certainty of highly successful results, the ease and convenience of orally administered tablets and the freedom from objectionable side-effects together explain the ever-growing use of Serocalcin. Reports from hospitals, private practice and large industrial undertakings all confirm its outstanding prophylactic value.

Consisting of a sulpho-guaiacolic plasma precipitate, Serocalcin is unique in the field of cold prophylactics. It is presented in the form of chocolate-coated tablets, two of which are given daily for thirty consecutive days. Immunity of about four months' duration follows this prophylactic course in eighty per cent. of cases. Serocalcin may be given without hesitation to children, in whom, incidentally, particularly good results may be expected.

SEROCALCIN

issued in

Vials of 20 tablets ... 3/1 Boxes of 60 tablets ... 7/8
Bottles of 100 tablets 10/10 Bottles of 250 tablets 23/1

(Special Nett Prices to the Medical Profession)

HARWOODS LABORATORIES LTD . WATFORD . HERTS

THE THERAPY OF ASTHMA

The treatment of asthma resolves itself into a consideration of underlying factors and causes. Often in ASTHMA *the underlying cause* is not discoverable or changes from time to time—now irritant dusts, now bacterial infection etc. *The underlying factor* is fortunately always the same—bronchospasm.

Thus sometimes causative agents can be removed or mitigated but always the underlying factor—bronchospasm—can be treated, successfully, with FELSOL.

Most cases of Asthma are chronic and demand patience. In treatment—persistence with FELSOL will yield the highest possible percentage of successes.

NO MORPHIA — NO NARCOTICS

Felsol POWDERS for ASTHMA

Physicians' samples and literature willingly sent on request

BRITISH FELSOL COMPANY LTD., 206/212 St. John St., London, E.C.1. Telephone: Clerkenwell 5862. Telegrams: Felsol, Smith, London.

SEPTEMBER 26, 1942

THE LANCET

A JOURNAL OF BRITISH AND FOREIGN MEDICINE, SURGERY, OBSTETRICS, PHYSIOLOGY, CHEMISTRY, PHARMACOLOGY, PUBLIC HEALTH, AND NEWS

No. 6213 LONDON: SATURDAY, SEPTEMBER 26, 1942 CCXLIII

CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT

ORIGINAL ARTICLES

The Thomas Splint in the Treatment of Fractured Femur — W. S. DIGGLE, FRCS 355

Bronchography in Children — C. ELAINE FIELD, MRCP (*illus.*) 357

Sulphapyridine Anuria: a Fatal Case — J. CARSON, MD, G. STEWART SMITH, MD 359

Sulphapyridine Anuria treated by Cystoscopy and Ureteric Catheterisation — Surgeon Lieuts. R. C. S. BENSON, MB, R. C. PERCIVAL, FRCS 360

A Water-borne Outbreak of Paratyphoid B Fever — D. J. JONES, MB, DPH, P. G. H. GELL, MB, R. KNOX, MRCP (*diagram*) 362

Portable Apparatus for Continuous Intravenous Therapy — Squadron-Leader B. G. B. LUCAS, MRCS, DA, A. L. SIMS (*illus.*) 364

Preparation of Antiscorpion Serum: Use of Atropine and Ergotoxine — AHMED HASSAN MOHAMMED, PH D 364

A Case of *P. falciparum* Malaria — J. ELLIOT MURRAY, MD, P. G. SHUTE, FRES 365

Medical Planning — C. O. S. BLYTH BROOKE, MRCS 382

Hong-Kong on the Eve — P. B. WILKINSON, MRCP..... 373

IN ENGLAND NOW

A Running Commentary by Peripatetic Correspondents.... 376

LEADING ARTICLES

STAPHYLOCOCCAL NURSERY 367

MORALE 367

THE SPECIALIST IN THE FORCES.. 368

SUPERLATIVE ASEPSIS 369

ANNOTATIONS

More Pædiatric Planning..... 370

The Thomas Splint..... 371

Loss of Life in Two Wars..... 371

Positive Convalescence 372

Medical Judge 372

Unsigned Comment 372

REVIEWS OF BOOKS

Non-Pulmonary Tuberculosis. Michael C. Wilkinson, MB..... 366

The Autonomic Nervous System. James C. White, MD, Reginald H. Smithwick, MD..... 366

Companion to Manuals of Practical Anatomy. E. B. Jamieson, MD 366

The Blood in Cancer. O. Cameron Gruner, MD..... 366

SPECIAL ARTICLES

A Place for the Assistant Nurse.. 374

The Production of Antibodies.... 373

Medicine and the Law: Professional Liabilities in War-time.. 375

PUBLIC HEALTH

From the Annual Reports..... 380

Infectious Disease in England and Wales 381

OBITUARY

Prof. David Waterston, FRCSE.... 381

Major John MacMillan, MB (*portrait*) 381

Alwyne Theodore Compton, FRCS. 381

Lieut. Donald Seymour Scott, MRCP (*portrait*)..... 381

LETTERS TO THE EDITOR

Considerate Tonsillectomy (Mr. John Gerrie, FRCSE, Dr. J. Ross Mackenzie) 377

Sickness Rates for Women (Sir Henry Bashford, MD) 377

Unsigned Reviews (Prof. R. A. Fisher, FRS) 377

Soldier's Doctor (Maj.-Gen. R. J. Blackham, late AMS)..... 378

Death Certification and Congenital Syphilis (Dr. David Nabarro).. 378

Nitrous Oxide Anæsthesia (Dr. R. Blair Gould) 378

Vitamin C in Pernicious Anæmia (Dr. S. C. Lewsen)..... 379

Hen Wlad fy Nhadau..... 379

MD Cantuar (Dr. R. R. Prewer).. 379

Liaison 379

Model Wounds in First-aid Teaching (Lieut.-Col. H. E. Crocker).. 380

NOTES AND NEWS

Educational Films from Russia .. 383

Infectious Diseases in Germany.. 383

Subdural Hæmatoma..... 375

University of Leeds 383

Rehabilitation Centre for Scotland 383

Royal Faculty of Physicians and Surgeons of Glasgow..... 381

Medical Casualties 383

Medical Research Council..... 383

Imperial Cancer Research Fund.. 383

Medical Defence Union..... 383

London County Council..... 384

Registrar for Forty Years..... 384

Lectures on Dermatology 384

Hospitals in the North-east..... 384

Chiropodists wanted for ATS 384

Nursing Policy in West Africa.... 384

Instructions for Measuring Insulin 363

Biochemical Society 366

Index to *The Lancet*, Vol. I, 1942. 384

Births, Marriages and Deaths.... 384

NEW EDITIONS OF LIVINGSTONE PUBLICATIONS

A TEXTBOOK OF MEDICINE

Sixth Edition. By J. J. CONYBEARE, M.D., F.R.C.P., assisted by 17 Eminent Contributors. Demy 8vo, 1,200 pp. Illustrated. **28s.** net, postage 8d. (October 1942.)

¶ *Thoroughly revised and brought up to date in all departments.*

ILLUSTRATIONS OF SURGICAL TREATMENT

Instruments and Appliances

Second Edition. By ERIC L. FARQUHARSON, M.D., F.R.C.S.E., with a Foreword by Sir JOHN FRASER, *M.C.*, M.D., Ch.M., F.R.C.S.E. Royal 8vo, 404 pp. Profusely illustrated with 382 Photographs and Diagrams, including 60 full-page Plates, showing over 400 instruments and appliances. **25s.** net, postage 7d. (September 1942.)

MEDICAL JURISPRUDENCE & TOXICOLOGY

Seventh Edition. By JOHN GLAISTER, M.D., D.Sc. Demy 8vo, 679 pp., 132 illustrations, several in colour. **28s.** net, postage 7d. (September 1942.)

¶ *The new edition has been entirely re-cast with many new illustrations. Up to date and authoritative.*

HANDBOOK ON DISEASES OF CHILDREN

Third Edition. By BRUCE WILLIAMSON, M.D. (Edin.), F.R.C.P. (Lond.). Crown 8vo, 377 pp., 70 Illustrations, 6 Plates in Colour. Bound in Limp Rexine. **12s. 6d.** net, postage 6d. (July 1942.)

¶ *Includes four new coloured plates of Common Fevers, and two coloured Nutrition Charts showing values in Vitamins, Iron and Calcium.*

E. & S. LIVINGSTONE, 16-17 Teviot Place, EDINBURGH, 1

HENRY KIMPTON'S NEW PUBLICATIONS

New (Fourth) Edition *Ready Next Week*

AN INTRODUCTION TO CLINICAL PERIMETRY
By H. M. TRAQUAIR, M.D., F.R.C.S.
With a Foreword by NORMAN M. DOTT, M.B., Ch.B., F.R.C.S.
Fourth Edition, Revised and Enlarged.
Crown quarto. 348 Pages. 245 Illustrations. 3 Colour Plates.
Cloth. Price 30/- net (postage 9d.).

THE EYE MANIFESTATIONS OF INTERNAL DISEASES
By I. S. TASSMAN, M.D.
Royal octavo. 542 Pages. 201 Illustrations, including 19 in Colour.
Cloth. Price 48/- net.

ENDOCRINOLOGY
Clinical Applications and Treatment
By AUGUST A. WERNER, M.D., F.A.C.P.
Second Edition, thoroughly revised.
Royal octavo. 924 Pages. 327 Illustrations and a Coloured Plate.
Cloth. Price 45/- net.

CLINICAL HEMATOLOGY
By MAXWELL M. WINTROBE, M.D., Ph.D.
Royal octavo. 792 Pages. 167 Illustrations and 7 Coloured Plates.
Cloth. Price 45/- net.

ELECTROTHERAPY & LIGHT THERAPY
By RICHARD KOVÁCS, M.D.
Fourth Edition.
Royal octavo. 735 Pages. 314 Illustrations. Cloth.
Price 37/6 net (postage 8d.).

A DESCRIPTIVE ATLAS OF RADIOGRAPHS
By A. P. BERTWISTLE, M.B., Ch.B., F.R.C.S.Ed.
Fifth Edition, Revised and Enlarged.
Crown quarto. 584 Pages. 879 Illustrations. Cloth. Price 42/- net

HENRY KIMPTON
Medical Book Dept. of Hirschfeld Bros., Ltd.
26 BLOOMSBURY WAY, LONDON, W.C.1

WRIGHT'S PUBLICATION

JUST PUBLISHED

Thirteenth Edition. Fully Revised. 8½×5½ in.
548 pp. 534 Illustrations, several of which are in colour

25s. net ; postage 7d.

PYE'S SURGICAL HANDICRAFT

Edited by **HAMILTON BAILEY, F.R.C.S.**
with the Collaboration of 40 Contributors

A manual of surgical manipulations, minor surgery, and other matters connected with the work of house surgeons and surgical dressers

Reviews of former editions :—

"This new edition should maintain the popularity of a well-established work."—*British Medical Journal*

"In its new form it is likely to become the cherished possession of a new generation of active surgical practitioners."—*Lancet*

BRISTOL : JOHN WRIGHT & SONS LTD.
LONDON : SIMPKIN MARSHALL (1941) LTD.

CUNNINGHAM'S TEXT-BOOK OF ANATOMY (7th Edition)
Edited by **J. C. BRASH**, M.D., F.R.C.S., and **E. B. JAMIESON**, M.D.
Pp. 1532 1171 Illustrations (653 in Colour) 76 Plates **60s. net**

CUNNINGHAM'S MANUALS OF PRACTICAL ANATOMY (10th Edition)
Edited by the Same. Vol. 1 : Introduction, Upper Limb, Lower Limb. Pp. 430. 194 Illustrations (114 in Colour). Vol. 2 : Thorax and Abdomen. Pp. 510. 237 Illustrations (128 in Colour). Vol. 3 : Head and Neck, Brain. Pp. 546. 235 Illustrations (113 in Colour). Each Volume **16s. net**

COMPANION TO MANUALS OF PRACTICAL ANATOMY (5th Edition)
By **E. B. JAMIESON**, M.D.
Pp. 720 **15s. net**

HISTOLOGY FOR MEDICAL STUDENTS
By **H. HARTRIDGE**, M.D., D.Sc., and **F. HAYNES**, M.A.
Pp. 412 514 Illustrations (502 in Colour) **15s. net**

APPLIED PHYSIOLOGY (7th Edition)
By **SAMSON WRIGHT**, M.D., F.R.C.P.
Pp. 827 367 Illustrations 5 Colour Plates **25s. net**

TEXT-BOOK OF THE PRACTICE OF MEDICINE (6th Edition)
By Various Authors. Edited by **FREDERICK W. PRICE**, M.D., F.R.S. (Edin.)
Pp. 2077 Illustrated **38s. net**

PHARMACOLOGY
By **J. H. GADDUM**, D.Sc., M.R.C.S., L.R.C.P.
Pp. 417 74 Illustrations **17s. 6d. net**

MUIR AND RITCHIE'S MANUAL OF BACTERIOLOGY (10th Edition)
Revised by **C. H. BROWNING**, M.D., D.P.H., F.R.S., and **T. J. MACKIE**, C.B.E., M.D., D.P.H.
Pp. 996 212 Illustrations 6 Colour Plates **20s. net**

A TEXT-BOOK OF PSYCHIATRY (5th Edition)
By **D. K. HENDERSON**, M.D., F.R.F.P.S., F.R.C.P., and **R. D. GILLESPIE**, M.D., F.R.C.P., D.P.M.
Pp. 672 **20s. net**

Oxford University Press

Eleven Recent Books

of

J. & A. CHURCHILL Ltd.

FOURTH EDITION 71 Illustrations 28s.

MEDICINE

Essentials for Practitioners and Students

By G. E. BEAUMONT, D.M., F.R.C.P., Physician to the Middlesex Hospital

DISORDERS OF THE BLOOD
By L. E. H. WHITBY, *C.V.O., M.C.*, M.D., F.R.C.P., and C. J. C. BRITTON, M.D., D.P.H., Assistant Pathologists, The Bland-Sutton Institute of Pathology, The Middlesex Hospital. *Fourth Edition.* 12 Plates (8 Coloured) and 59 Text-figures. **28s.**

A TEXTBOOK OF BIOCHEMISTRY
By A. T. CAMERON, D.Sc., F.I.C., F.R.S.C., Professor of Biochemistry, University of Manitoba. *Sixth Edition.* 3 Plates and 25 Text-figures. **18s.**

RECENT ADVANCES IN PATHOLOGY
By G. HADFIELD, M.D., F.R.C.P., Professor of Pathology, University of London; and L. P. GARROD, M.D., F.R.C.P., Professor of Bacteriology, University of London. *Fourth Edition.* 35 Illustrations. **18s.**

ANTENATAL AND POSTNATAL CARE
By F. J. BROWNE, M.D., F.R.C.S., F.R.C.O.G., Professor of Obstetrics and Gynæcology, University of London. *Fourth Edition.* 84 Illustrations. **24s.**

DISEASES OF THE EYE
By SIR JOHN HERBERT PARSONS, *C.B.E.*, D.Sc., F.R.C.S., F.R.S., Consulting Ophthalmic Surgeon, University College Hospital. *Tenth Edition.* Revised with the assistance of H. B. STALLARD, M.D., F.R.C.S. 21 Plates, 20 in Colour. 372 Text-figures. **25s.**

A SHORT TEXTBOOK OF SURGERY
By C. F. W. ILLINGWORTH, M.D., F.R.C.S.Ed., Regius Professor of Surgery, University of Glasgow. *Third Edition.* 12 Plates and 201 Text-figures. **27s.**

STARLING'S PRINCIPLES OF HUMAN PHYSIOLOGY
Edited and Revised by C. LOVATT EVANS, D.Sc., F.R.C.P., F.R.S., Jodrell Professor of Physiology, University College, London. *Eighth Edition.* 673 Illustrations, 7 in Colour. **32s.**

APPLIED PHARMACOLOGY
By A. J. CLARK, *M.C.*, M.D., F.R.C.P., F.R.S., Professor of Materia Medica and Pharmacology, University of Edinburgh. *Seventh Edition.* 92 Illustrations. **24s.**

SYNOPSIS OF HYGIENE (Jameson and Parkinson)
Seventh Edition. By G. S. PARKINSON, *D.S.O.*, D.P.H., Lt.-Col. R.A.M.C. (retd.); Acting Dean and Director of Public Health Department, London School of Hygiene and Tropical Medicine. 16 Illustrations. **25s.**

TROPICAL MEDICINE
By SIR LEONARD ROGERS, *K.C.S.I., C.I.E.*, M.D., F.R.C.P., F.R.C.S., F.R.S., late Medical Adviser, India Office; and SIR JOHN W. D. MEGAW, *K.C.I.E.*, M.B., late Medical Adviser, India Office. *Fourth Edition.* 2 Coloured Plates and 87 Text-figures. **21s.**

104 GLOUCESTER PLACE

London W.1

H. K. LEWIS & Co. Ltd.

VENEREAL DISEASE
By **E. T. BURKE**, *D.S.O.*, M.B., Ch.B. With 133 Text Illustrations and 6 Coloured Plates. Demy 8vo. **30s.** net; postage 7d.

A HANDBOOK FOR ASSISTANT MEDICAL OFFICERS OF HEALTH ON CHILD WELFARE AND SCHOOL MEDICAL WORK
By **F. J. G. LISHMAN**, M.D., D.P.H., Deputy County Medical Officer of Health, Devon C.C. Demy 8vo. **6s.** net; postage 3d.

THE PRINCIPLES AND PRACTICE OF RECTAL SURGERY
By **W. B. GABRIEL**, M.S. Lond., F.R.C.S. Eng. Second Edition. Thoroughly Revised, with 9 Coloured Plates and 162 Illustrations in the Text. Demy 8vo. **28s.** net; postage 7d.

CARDIAC SYMPTOMS IN THE NEUROSES
By **DORIS M. BAKER**, M.D., M.R.C.P. Lond. With 7 Illustrations. Crown 8vo. Paper Boards. **4s. 6d.** net; postage 3d.

THE ACTION OF MUSCLES
Including Muscle Rest and Muscle Re-education
By **Sir COLIN MACKENZIE**, M.D., F.R.C.S., F.R.S. Edin. Second Edition, Reprinted. Biographical Note by C. V. MACKAY, M.D. Melb., with a Portrait. With 100 Illustrations. Demy 8vo. **12s. 6d.** net; postage 7d.

A PATHOLOGY OF THE EYE
By **EUGENE WOLFF**, F.R.C.S. With 124 Illustrations. Crown 4to. **28s.** net; postage 7d.

By the Same Author

ANATOMY OF THE EYE AND ORBIT
Including the Central Connections, Development and Comparative Anatomy of the Visual Apparatus
Second Edition. With 242 Illustrations. Crown 4to. **31s. 6d.** net; postage 7d.

SURGERY FOR NURSES **Just Published**
By **HAMILTON BAILEY**, F.R.C.S., and **R. J. McNEILL LOVE**, M.S., F.R.C.S. Fifth Edition. With 451 Illustrations (46 Coloured). Demy 8vo. **17s. 6d.** net; postage 7d.

PRACTICAL HANDBOOK OF THE PATHOLOGY OF THE SKIN
An Introduction to the Histology, Pathology, Bacteriology and Mycology of the Skin, with special reference to Technique
By **J. M. H. MacLEOD**, M.A., M.D., F.R.C.P. Lond., and **I. MUENDE**, M.R.C.P. Lond., M.B., B.S., B.Sc. Lond. Second Edition. With 153 Illustrations (some coloured). Royal 8vo. **42s.** net.

THE PRINCIPLES AND PRACTICE OF X-RAY THERAPY
By **FFRANGCON ROBERTS**, M.A., M.D. With 115 Illustrations, including 6 Plates. Demy 8vo. **10s. 6d.** net; postage 7d.

WAR WOUNDS AND AIR RAID CASUALTIES
Articles republished from the *British Medical Journal*. Foreword by SIR WILLIAM P. MACARTHUR, *K.C.B., D.S.O.*, M.D. With Illustrations. Demy 8vo. **10s. 6d.** net; postage 7d.

CLINICAL ASPECTS OF THE ELECTROCARDIOGRAM
Including the Cardiac Arrhythmias
By **HAROLD E. B. PARDEE**, M.D. With 219 Illustrations. Demy 8vo. **35s.** net; postage 9d.

INJURIES AND THEIR TREATMENT
By **W. ELDON TUCKER**, M.A., B.Ch., F.R.C.S. With 80 Illustrations. Demy 8vo. **9s.** net; postage 7d.

CARDIOVASCULAR DISEASE IN GENERAL PRACTICE
By **TERENCE EAST**, M.A., D.M. Oxon., F.R.C.P. Lond. With 43 Illustrations. Demy 8vo. **10s. 6d.** net; postage 7d.

London: H. K. LEWIS & Co. Ltd., 136 Gower Street, W.C.1

Enter

BENZEVAN

for the treatment of SCABIES

Clinical trials have testified to the value of benzyl benzoate as a sarcopticide. Benzevan has been introduced to meet the demand for a non-irritant emulsion containing benzyl benzoate.

In bottles of 4 fl. oz. 4/2d. each
In bottles of 20 fl. oz. 15/10d. each

Prices include Purchase Tax and apply to Gt. Britain and N. Ireland. Subject to usual discounts.

A supply of Benzevan for trial will be sent on application to The Home Medical Department, Concert Street, Liverpool, 1.

EVANS
MEDICAL PRODUCTS

Made by
EVANS SONS LESCHER AND WEBB LTD
LIVERPOOL AND LONDON

M.25B

MINISTRY OF SUPPLY

Defence (General) Regulations 1939 No. 55. S.R. & O. 1942. No. 1770

AN ORDER

RUBBER MUST NOT BE DESTROYED THROWN AWAY OR MIXED WITH REFUSE

The Minister of Supply in exercise of the powers conferred on him by Regulation 55 of the Defence (General) Regulations 1939, has made an Order which provides as follows :—

1 No person shall, except under the authority of and in accordance with a licence granted or a special or general direction issued by the Minister of Supply,

(a) destroy any waste rubber
(b) throw away or abandon any waste rubber
(c) put any waste rubber in a refuse bin or other receptacle used for domestic or trade refuse, or
(d) cause or permit any waste rubber awaiting or in the course of collection or sale to be or become mixed with any material or article other than waste rubber.

Provided that nothing in this Order shall prohibit or restrict the destruction of any waste rubber if and so far as necessary in the course of any process of manufacture, or for the purpose of saving property from immediate danger of destruction or damage by fire.

2 (1) The holder of any licence granted under this Order shall comply with any conditions contained or incorporated in the licence.

(2) If any licence so granted is revoked by the Minister of Supply, the holder of the licence shall forthwith deliver up the licence to the Minister or as directed by him

3 IN THIS ORDER:

"*rubber*" includes reclaimed rubber, liquid latex, gutta percha and balata, and "*waste rubber*" means any worn-out, disused, discarded or waste material or article of the classes or descriptions specified in the Schedule to this Order, but does not include any material or article which is injurious to health or otherwise offensive.

4 This Order shall come into force on the 7th day of September, 1942, and may be cited as the Salvage of Waste Materials (No. 4) Order 1942.

THE SCHEDULE

(a) *Articles or materials of any of the following descriptions made wholly or partly of rubber :—*

Balloons • Balls — sports and toy • Bathing-caps • Beds — inflated and sponge • Bulbs — horn, surgical, etc. • Carpet underlay • Catapult strip • Corks and Closures • Corsets — all rubber • Crepe-soled Footwear • Cushions — inflated and sponge • Door-stops • Draught-excluders • Ear Plugs • Elastic Cord and Thread • Electric Cable and Wiring • Football Bladders • Footwear (including Wellingtons and Gum Boots) • Flooring and Tiling • Gloves • Goloshes • Grips — handlebars, etc. • Horse-shoes and pads • Hose and Tubing • Hot-water bottles • Jar-rings • Mats and Matting • Mattresses — inflated and sponge • Milking Rubbers • Pedal-rubbers • Radiator Hose • Rollers • Soles and Heels • Sponge-backed Flooring • Sponges • Squeegees • Stair-treads and nosings • Stopper-rings • Teapot Spouts • Teats and Soothers • Tobacco Pouches • Tubing • Tyres — Pneumatic (Covers, Tubes and Flaps), Solid and Cushion of all types • Upholstery.

(b) *Articles or materials of any other description made wholly or mainly of rubber.*

THIS ORDER CAME INTO FORCE SEPT. 7

A Man's Work with a Woman's Physique

Nowadays, women are assuming many of the tasks normally expected only of men. Such work often entails long hours under tiring conditions, with ensuing muscular pains, backache and headache.

Dysmenorrhœa, also, frequently accompanies the undertaking of a new occupation involving unaccustomed manual work.

VEGANIN gives most satisfactory results in such conditions since it contains acetylsalicylic acid, phenacetin and codeine in small, non-toxic, yet efficient dosage. The combination of these remedies is synergistic in its action and produces prompt relief without ill effects.

Veganin is not habit-forming.

WILLIAM R. WARNER & CO. LTD., POWER ROAD, CHISWICK, LONDON, W.4

URIC ACID CONDITIONS

URALYSOL combining the most powerful solvents and neutralisers of uric acid (thyminic acid, hexamethylenetetramine-anhydromethylenecitrate and lithine salts) is potent in all diseases of uric acid nature. It is highly effective in all the acute painful end-results of excessive uric acid.

¶ *Gout, Fibrositis.*

The chronic pains of the joints which arise from long-standing excessive production of uric acid are diminished and finally stopped.

¶ *Chronic Rheumatic conditions.*

The disturbances of uric acid metabolism in which these pains originate are regulated so as to prevent recurrence.

¶ *Disturbances of uric acid metabolism.*

The eliminatory powers of the preparation have great therapeutic value in certain renal conditions by dissolving the acid deposits.

¶ *Renal lithiasis and gravel.*

*You are invited to apply for Literature and Sample.

℔ URALYSOL

CONTINENTAL LABORATORIES LTD. BRUNEL ROAD, LONDON, W.C.

Inclement Weather and Muscular Aches and Pains

Bengué's Balsam produces rapid relief of pain in Myalgia and in painful joint affections. Through local decongestive action and systemic salicylate influence it quickly allays joint and muscle discomfort. Swelling subsides and easier movement becomes possible, resolution is promoted and restoration of action is hastened.

The systemic action of Bengué's Balsam, produced by cutaneous absorption of Methyl Salicylate, never leads to the gastric irritations so often encountered in oral administration of salicylates.

A generous sample will be sent upon request

INFLUENZA
•
MYALGIA
•
RHEUMATOID CONDITIONS
•
LUMBAGO

BENGUÉ'S BALSAM

BENGUÉ & CO. LTD., MOUNT PLEASANT, ALPERTON, WEMBLEY, MDX.

Parasympathetic Stimulant

MORYL

TRADE MARK BRAND

CARBAMINOYLCHOLINE CHLORIDE

A powerful stimulant of the parasympathetic nervous system, chemically related to acetylcholine, but more active and more stable.

Indicated more especially in post-operative intestinal stasis and urinary retention. "Moryl" is also useful in eclampsia and pre-eclamptic conditions, hypertonia, paroxysmal tachycardia, anxiety neurosis, ozœna and glaucoma.

Hypnotic — Sedative

TETRONOX

TRADE MARK BRAND

TABLETS

Enhanced power of barbitone through careful combination with other drugs—reduced toxicity ; no cumulative action or injurious effects on circulation, respiration or gastro-intestinal tract. "Tetronox" has a wide field of indications in psychiatry and is furthermore of value in menstrual discomforts, post-operative and post-partum sedation, occupational insomnia, premature waking, delirium tremens, etc.

Further information and samples upon request

SAVORY & MOORE LTD., 61 WELBECK ST., LONDON, W.1 (C 10)

Optrex Tulle

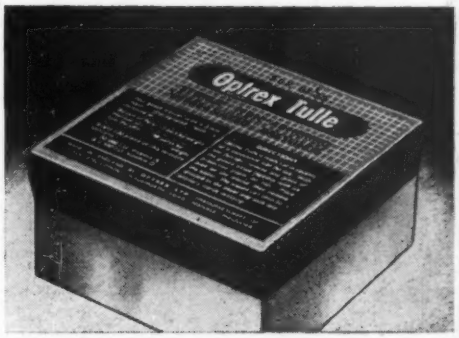
BRAND

REDUCED PRICES

We have pleasure in announcing that, owing to improved manufacturing facilities, we are able to make a reduction in the price of Optrex Tulle.

MEDICAL PROFESSION . . . 4/- per tin
(45/- per doz. tins)

Special Price to Hospitals is now in operation and details will be supplied on application.



Optrex Tulle Dressings are sterile, non-adhering, and impregnated with a special petroleum compound They are being used to an ever increasing extent for burns, septic wounds and plastic surgery. They are made by Optrex Ltd., makers of Optrex Eye Lotion. For further particulars please communicate with—

Chas. F. Thackray LTD
Sole Distributors for Optrex Tulle

THE OLD MEDICAL SCHOOL, PARK ST. LEEDS AND 252, REGENT ST. LONDON, W.1

POST-ENCEPHALITIC PARKINSONISM

IN many instances marked improvement has been effected in the Parkinsonian syndrome by 'Benzedrine' Tablets without other drugs. But the best results are usually obtained through synergism with hyoscine, stramonium, atropine, or belladonna. This combined therapy controls or eliminates such symptoms as oculogyric crises, drowsiness, weakness, lowered mood, salivation, muscular rigidity, and tremor. Literature and samples will gladly be sent on the signed request of physicians.

Each tablet contains 5 mg. β-aminoisopropylbenzene sulphate (amphetamine sulphate).

'BENZEDRINE' TABLETS

MENLEY & JAMES LTD., 123 COLDHARBOUR LANE, LONDON, S.E.5

BT 12

HEPARIN-BOOTS

Anticoagulant

HEPARIN-BOOTS is a powerful non-toxic anticoagulant prepared from ox lung for the treatment of coronary and cerebral thrombosis, as a prophylactic against post-operative pulmonary embolism, in vascular surgery, and blood transfusions.

HEPARIN-BOOTS is standardised in our Pharmacological Laboratories in terms of Toronto Units. One Toronto Unit is the activity of 0.009 mg. pure Heparin sodium salt.

Supplied in 5 c.c. rubber-capped vials.

1,000 Toronto Units per c.c. 11/3

Price Net.

Obtainable through all branches of

Boots

Literature sent upon request.

BOOTS PURE DRUG CO. LTD NOTTINGHAM

B790-61

Problem

What will best control "Night Pain" in the peptic ulcer patient?

Answer

'ALUDROX'

Four drams of 'Aludrox' given at bedtime exert a prolonged antacid effect usually lasting until morning. The patient sleeps more comfortably.

'ALUDROX'

Amphoteric Gel

JOHN WYETH & BROTHER LTD. 25, OLDHILL PLACE, LONDON, N.16.
(Sole distributors for Petrolagar Laboratories Ltd.)

St. Mary's Hospital

VACCINES

FOR RESPIRATORY AFFECTIONS

Anti-Catarrh Vaccine

The ideal time for commencing prophylaxis against "colds" is during September. Three graduated doses, with an interval of from 7 to 10 days between each, are recommended. The vaccine especially designed for the purpose is "Anti-Catarrh Vaccine," containing *M. catarrhalis*, with *Pneumococcus, B. pneumoniæ, B. septus, B. influenzæ and Streptococcus.* Similar vaccines for the treatment of respiratory affections are also available.

Supplied in sets of 3 or 6 graduated doses and in ampoules of 1 c.c.; also in bottles of 10 c.c. and 25 c.c.

Influenza Virus Vaccine

Prepared from viruses isolated from cases of epidemic influenza in man. For protection against influenza, it is recommended that this virus vaccine be used in conjunction with a bacterial vaccine (Anti-Influenza Vaccine, Mixed). A total of three doses given in September or October supplemented by a further two doses in December or January is the usual prophylactic course.

Supplied in sets of 5 doses for immunization of one person, or in 1 c.c. ampoules or 10 c.c. vials of either virus or bacterial vaccine.

These vaccines are prepared in the Laboratories of the Inoculation Department (Founder: Sir Almroth E. Wright, F.R.S., M.D., etc.) of St. Mary's Hospital, London, W.2, where constant observation of their effects on patients in the Research Wards and Out-Patient Clinics of the Department maintains their standard at a very high level.

SOLE AGENTS

Parke, Davis & Co., 50 Beak Street, London, W.1

Inc. U.S.A., Liability Ltd.

TRADE MARK

'Sodium Amytal' BRAND

SODIUM ISO-AMYL ETHYL BARBITURATE

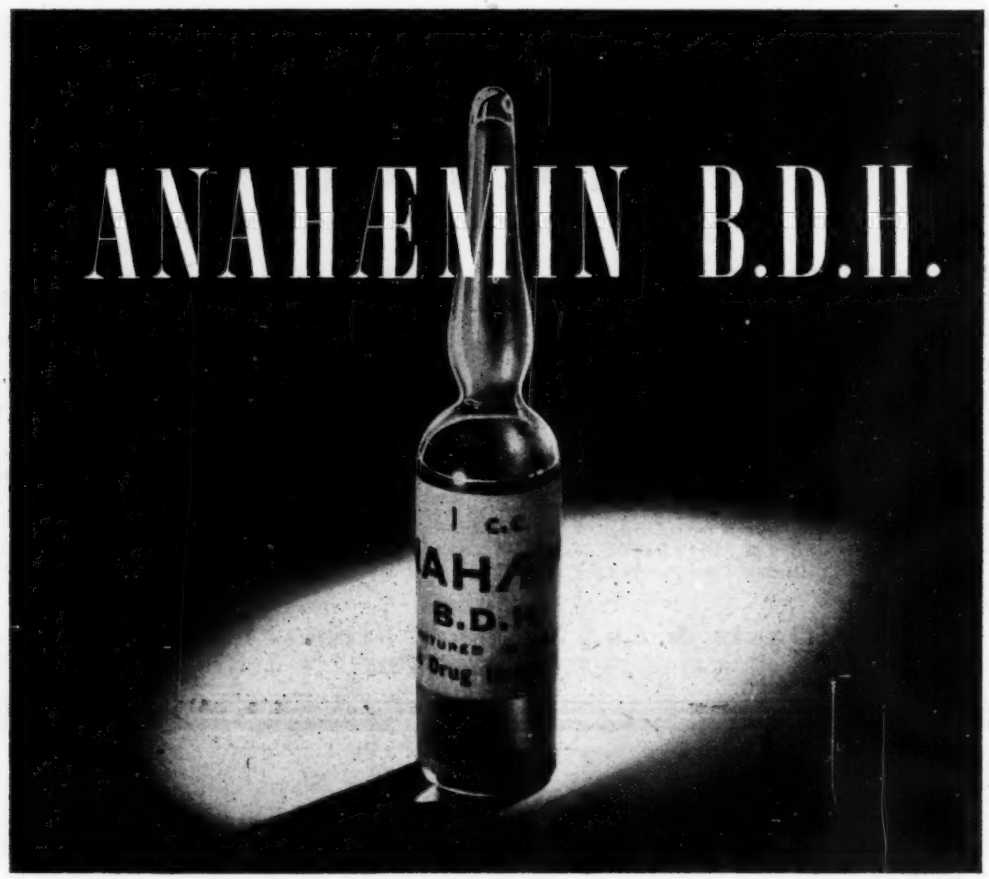
in Psychiatric Conditions

Many years of clinical experience have proved the value of 'Sodium Amytal' in disturbed mental conditions. Patients may receive effective doses with relative safety. Psychotherapy may be successfully employed in the "twilight" state which is induced. This method is recommended for treatment of hospitalized cases but may be employed in private homes with adequate nursing supervision. Permanently good results may be obtained.

Literature will be supplied to physicians upon request

ELI LILLY AND COMPANY LIMITED

BASINGSTOKE AND LONDON



Anahæmin B.D.H. is the hæmatopoietic principle of liver in high concentration. Thus it is active in minimum dosage with maximum intervals between injections; indeed, the administration of Anahæmin B.D.H. is the most economical method of producing blood regeneration and maintenance in pernicious anæmia.

Anahæmin B.D.H. possesses the additional advantage of being free from all therapeutically inert reaction-producing protein substances.

Literature on Anahæmin B.D.H. and price list of B.D.H. Medical Products will be sent post-free on request.

THE BRITISH DRUG HOUSES LTD. LONDON N.1

Telephone: Clerkenwell 3000 Telegrams: Tetradrome Telex London

An/E/86

THE THOMAS SPLINT
IN THE TREATMENT OF FRACTURED FEMUR

W. S. DIGGLE, MCH ORTH LPOOL, FRCS
ORTHOPÆDIC SURGEON TO WALTON CITY HOSPITAL, LIVERPOOL, AND BOOTLE GENERAL HOSPITAL

THIS paper is based on experience gained over a period of 8 years, during which over 200 fractures of the shaft of the femur have been treated, most of them at Walton City Hospital, Liverpool. The method which will be described is that of fixed skin traction using the splint devised by Hugh Owen Thomas. This method has produced a high standard of functional result.

In the treatment of any fracture the method which is ultimately decided on as the best is the result of a compromise by the surgeon in an attempt to achieve the maximum degree of each of the following: accurate reduction of the fracture; immobilisation of the fragments; maintenance of function of the limb until the fracture has united. Taking fractures as a whole, there seems no doubt that, other things being equal, those fractures which are most accurately reduced will produce the best functional result. Trauma by treatment, however, while producing an excellent anatomical position as demonstrated by X rays, may introduce some additional complication which reduces the functional value of the result.

In treating fracture of the femur, surgeons during the past few years have sought to achieve full length in the limb by means of positive skeletal traction applied either to the upper end of the tibia or to the lower end of the femur. Excellent anatomical reposition can be obtained by skeletal traction, but often only at the expense of stiffening of the knee. In any method of treating this fracture the surgeon's main difficulty in the later stages is that of knee movement. In my opinion the method to be described offers the quickest return of useful knee movement coupled with adequate anatomical reposition. In patients up to about 20 years, there is little difficulty in achieving full length without prejudicing the return of knee movements. The difficulties are greater in those muscular healthy men between the ages of 20 and 55 in whom it is not easy to achieve full length without producing a degree of stiffness of the knee which may take many months of treatment before movement reaches 90°. Too much importance has been attached to the achievement of full length; in recent years surgeons have even been encouraged to distract the fragments sometimes, thus producing non-union.

Treatment of a fracture of the shaft of the femur, entirely apart from anatomical reposition, must be regarded as unsuccessful if knee movements have not reached 90° within 12 months, and it should only be regarded as successful if that degree of movement is achieved within 9 months; 90° of knee movement is chosen as the arbitrary dividing line between success and failure because it is the amount of movement necessary for a working man to climb ladders and steps. Provided in the end the patient has at least 90° of knee movement the amount of shortening, if less than ¾ in., is relatively unimportant. The limp resulting from shortening of the femur up to ¾ in. can be overcome by a shoe or boot with a raised heel.

TECHNIQUE

Anæsthesia.—Full relaxation of the muscles of the injured limb is essential, so that the fracture may be reduced and length obtained at the earliest possible moment. The method is used to maintain reduction carried out during the anæsthesia and not to produce slow reduction of the fracture by traction. My preference is for spinal anæsthesia, but in cases where the patient is in a state of shock open ether is probably the best form of anæsthetic.

The Thomas splint.—Since Thomas first described his original splint there have been numerous modifications and "improvements," none of which is as good as the original Thomas, with its fixed ring at the upper end and its wrought iron sides. Spring steel and expanding sides or ring give no advantage. It is of course necessary to have a fairly large selection of different sizes of splints, but an exact fit is not necessary in every case.

The relationship of the upper ring of the Thomas to the bony pelvis is important. Counter-traction must be upon the ischial tuberosity, and the relationship of the inner posterior segment of the ring must be carefully maintained in respect of that bony part. In general, the ring is kept in position by the accuracy of the fit to the outer side of the thigh, and where the ring is only a little too large apposition may be maintained by a cotton-wool pack between the outer anterior part of the ring and the skin of the thigh about 1–1½ in. distal to the anterior superior iliac spine. An alternative method of maintaining the ring in its proper relationship to the tuber ischii is by the use of the Balkan beam with a weight and pulley attached to the anterior part of the ring so that it is lifted from behind on to the ischial tuberosity. If a ring which is much too large has to be used, the Balkan beam, weight and pulley method is the only one which will maintain the ring in its proper position in relation to the ischial tuberosity. Should the ring for any reason slip into the perineum, the point of counter-traction is changed, shortening is produced, increased tension of the traction tapes is extremely painful, and nursing care more difficult to carry out. The buff leather covering the felt around the ring becomes dirty after being used on a case, and may be softened by massaging with castor oil. 'Sorbo' rubber padding is not an improvement. The distal end of the splint should project ideally about 6–8 in. beyond the patient's foot, but there is no objection to variations in length between 5 in. and 9 in.

Preparation of the leg.—The limb is washed, shaved, cleaned with ether or spirit, dried and powdered, and the powder is then dusted from the skin.

Reduction of the fracture.—All the time the Thomas is being applied, the patient's foot is held in traction by an assistant who has no other duty. Often continued traction will be all that is necessary to achieve reduction when the patient is fully anæsthetised. Sometimes the upper fragment tends to ride forwards over the lower fragment and manipulation by the surgeon to correct this is often necessary. The surgeon can correct this displacement by flexing the site of fracture, usually not more than about 40°. In a transverse fracture the ends can commonly be locked and the fragments then aligned, while in an oblique fracture the pads which hold the upper end of the lower fragment well forwards must be relied on to maintain reduction. When the patient is fully anæsthetised the ring of the Thomas is slipped over the foot held by the assistant and passed to the top of the thigh. The distal end of the Thomas is then allowed to lie on the table and the limb is raised about 9 in. from the table while the traction tapes are applied.

Traction tapes.—I have found 'Elastoplast' extension plaster to be most useful for traction tapes. This plaster is not extensible in both directions: longitudinally it is quite rigid, but transversely it is capable of stretching and it may thus be applied easily to the varying curvature of the knee and thigh. At its upper end it should reach to about 2 in. above the fracture. The lower end is stitched carefully to a piece of strong non-extensible tape about ¾ in. wide and 18 in. long. In applying traction to the limb a start should be made at the distal end and the point of junction between the tape and extension strapping should be about 1 in. proximal to the malleoli. To prevent the tape from abrading the skin of the malleoli a layer of thin wool is wrapped round the ankle. The elastoplast extensions are applied one on each side of the limb, the outer one being ½–¾ in. more posterior than the inner one, so that when the traction is finally fixed there is a continual slight drag tending to keep the limb from falling into a position of external rotation because of the weight of the foot. The elastoplast extensions should not overlap at any part. There must be behind and in front a portion of skin never less than 1 in. wide to which there no traction strapping is attached. Failure to allow for this may lead to the development of a troublesome œdema around the ankle. When the traction strapping has been applied it is lightly bandaged by using a 3 in. cotton bandage. There must be no circular bands of strapping "to prevent the extensions slipping": they cause œdema. Provided this method of traction is used only to maintain reduction and not to achieve reduction it is seldom necessary during the

course of treatment to change the traction strapping because of slipping.

Back splints and side splints.—The use of a back splint is essential. It should reach almost up to the fold of the buttock and down to a point about 1–2 in. proximal to the internal malleolus. Its ends must be well padded; I use thin adhesive felt over each end and on top of that a layer of cotton-wool. Two side splints for the thigh are an advantage but not always essential. The inner one should be short enough to reach down almost to the internal condyle of the femur without its upper end bearing against the ring of the Thomas. The outer splint should reach from just below the great trochanter to a point above the external condyle of the femur. Their ends should also be well padded. At the site of fracture a large wool pad between the back splint and the limb maintains the important normal anterior bowing of the shaft of the femur. Where there has been some difficulty in correcting anterior displacement of the upper fragment this pad may appropriately be disposed just distal to rather than precisely at the site of fracture, thus holding forward the upper end of the distal fragment. A second woollen pad, placed behind the knee-joint, is of such a size that when the splints are strapped in position the knee-joint is immobilised in about 10° of flexion: this is most important. Observation has shown that where the limb is immobilised with the knee in full extension there is always great difficulty in restoring knee movements. Where the knee is immobilised in a little less than full extension the development of knee movements is subsequently comparatively easy. I believe this is because the last few degrees of extension of the knee-joint are associated with internal rotation of the femur on the tibia. By using a pad of wool to immobilise the knee in 10° of flexion this locking of the knee-joint is avoided, and when the patient subsequently begins to develop knee flexion he can apply the full flexing power of the hamstrings.

When the straight splints are ready for application, and while the assistant is still maintaining traction on the foot raised about 9 in. above the splint which is lying on the table, the surgeon carries out the manœuvres necessary for complete reduction of the fracture and the splints and pads are then applied. The splints are held in position by 2 in. wide adhesive strapping encircling the limb at four levels. The two pieces of strapping above the knee should be disposed so as to avoid causing any displacement of the fracture; their positions vary according to the level of the fracture. The error to be avoided is that of putting tight strapping just below the fracture and so producing backward displacement of the upper end of the lower fragment. The other two pieces of strapping are placed one at the level of the tibial tuberosity and the other near the distal end of the back splint. The strapping should not, at any part, be adherent to the skin; a thin layer of cotton-wool is placed under the circular bands to prevent them adhering to the skin. The limb is therefore in a tunnel of splints which do not impede traction.

The splinted limb is now lowered upon the Thomas, and is supported in the splint by three double layers of flannel, 6 in. wide, fastened by paper clips or safety pins at the outer side. The sag of the slings should be arranged so that about two-thirds of the diameter of the limb is anterior to the plane of the Thomas splint. While the assistant continues to maintain traction on the foot, the tapes are passed round the sides of the Thomas and fastened over the notch at the distal end. The limb may now be bandaged, together with the Thomas, by a flannel bandage reaching from the ankle to the upper part of the thigh. There is no need to use any appliance for preventing foot-drop. The foot is kept from dropping by the often repeated muscular efforts of the patient. Foot-drop should not develop unless the injury is complicated by a nerve palsy, in which case some appliance is necessary.

The Balkan beam greatly increases the mobility of the patient in bed, so that he may sit up or lie down at his own convenience. It provides a means of exercising not only the injured limb but all the limbs, and is of great assistance in keeping the ring of the Thomas in its proper position in relation to the ischial tuberosity. Nursing care is greatly simplified by its use. In Walton Hospital, for the sake of uniformity, a fractured femur is always treated in a Nesbit-Evans bedstead using the Nesbit-Evans bed crane, the vertical limb of which is used as a support for the horizontal beam of the Balkan frame. The Thomas splint should be slung from the beam by two attachments only, one to the front of the ring of the Thomas and the other to the distal end of the Thomas. The balancing weights are such that the patient can easily raise and lower the limb. If a patient must be urgently transferred to another hospital—which happens oftener under war conditions than it did in peace-time—the fixed-traction method permits of transport without loss of position of fragments. It is only necessary to cut the attachments of the Thomas to the Balkan beam.

Nursing care.—Pressure points which require to be treated regularly are: at the upper and lower ends of the back splint; in the neighbourhood of the ankle and heel; and on the skin around the upper part of the thigh adjacent to the ring. During the first two or three weeks the skin over the ischial tuberosity just below the anterior superior iliac spine must receive attention every four hours, night and day. The task does not require any special skill, but it must not be neglected. The skin is cleaned, dried, dusted and pulled by the fingers so that every few hours a different area of skin takes the pressure of the ring. Approach to the skin over the ischial tuberosity is easy if the uninjured limb is well abducted while the injured limb is raised. If the skin over the ischial tuberosity is allowed to get so sore that the pressure of the ring is too painful for the patient to bear, the method has failed and the surgeon must adopt some form of weight traction which does not, in my experience, give so high a general level of results. It is the nurse's duty often during the day to instruct the patient to dorsiflex the ankle. For the first few weeks the traction tapes should be tightened if necessary every eight hours, so as to keep a continuous drag on the limb. Usually after the sixth week the amount of traction can be decreased and it is merely necessary to keep the traction tapes taut.

Maintenance of function; weight-bearing.—The patient is encouraged to contract the thigh, calf and anterior tibial muscles throughout the whole treatment. Use of the Balkan beam and bed crane makes it easy to encourage the use of the muscles, and from the day after the application of the splint the patient should be able to sit up to take meals.

In general, the limb must be kept in the Thomas for about ten weeks, when the patient may begin to walk in a calliper. The actual change from the Thomas splint to the calliper is made when the fracture has united sufficiently to sustain the weight of the limb, but not soundly enough to bear the weight of the body. Tenderness and pain on straining the site of fracture should be slight; a good rough test is to observe the patient's ability or otherwise to lift the unsplinted limb from the bed without pain at the site of fracture.

A well-fitting calliper is important, in the form of a Thomas splint with the distal ends bent and implanted in a brass tube inset in the heel of the boot. The tube should be about in the middle of the heel but sloping from within outwards in a forward direction at an angle of about 15°. This slight angulation of the tube prevents the toes turning inwards during walking. Great care should be taken about the fitting of the ring so that there is no possibility of it slipping from the ischial tuberosity. The sides of the calliper should be of such a length that the limb does not bear weight, and the space between the man's heel and the upper surface of the heel of the boot should be about ¼ in. A patient describes the feeling of wearing a correctly fitting calliper: "It is as if I am sitting on the ring." The boot into which the calliper is fitted should preferably be of soft leather or cloth, so that it can be worn with the calliper without discomfort in bed. The patient sleeps and walks in the calliper and boot, usually for three or four weeks until union is sound enough to allow of active knee movements without pain at the site of fracture. When union has reached this stage the calliper may be given up at night and for three or four periods of half an hour each during the day while the patient practises active knee movements.

When pain on straining the site of fracture has almost disappeared the test of weight-bearing may be begun, at first under careful clinical supervision day by day. Usually weight-bearing is possible with safety at about the 20th–24th week. Not until the danger of angulation at the site of fracture is past should there be any passive movements at the knee-joint; in general, where passive movements are used at all they should be carried out under anæsthesia and by the surgeon in charge of the case—that is, they should take the form of a manipulative breakdown of knee adhesions. Anæsthesia for the manipulation should be full. In most cases simple gas anæsthesia does not produce an adequate relaxation of the thigh muscles. This passive manipulation of the knee is required in about 30% of cases in order to develop knee flexion to fully 90°. Once the knee flexion has been developed to this extent the development of further movement is influenced almost entirely by the man's own efforts, and seems to depend more particularly on the nature of his work. For instance, a collier, before he can do his work properly, requires to have a knee in which there is almost normal flexion, but in many forms of occupation the man expresses himself as completely satisfied with knee flexion when it has reached about 110°, and finds that the disability does not constitute an incapacity for work. In general, this stage of recovery is expected to be reached after about 32–36 weeks, and a case in which this degree of recovery is not achieved by the end of a year is regarded as slow.

X rays in this method of treatment are used merely to check the position of the fracture. Maintenance of length may be determined quite satisfactorily by measurement taken between the anterior superior iliac spine and the internal malleolus. Angulation can be corrected by the insertion of wool pads or alteration in the size of the wool pads inserted between the limb and one or more of the splints. Little regard is paid to X-ray shadows in determining the time for weight-bearing, which is assessed on purely clinical grounds.

Complications.—Loss of length of more than ¼ in. indicates a failure in technique—a lessening of the traction and immobilisation at some time after the reduction of the fracture and during the first six weeks. If length has been maintained during that time, shortening hardly ever occurs. In general, one expects the amount of shortening to be less than ¼ in., lengthening up to ¼ in. may be produced by too enthusiastic tightening of the traction tapes in children.

Angulation at the site of fracture may be due either to failure to correct angulation by means of wool pads or to an improperly fitting calliper which has allowed the limb to bear weight too early. I have not seen a case of non-union with this method. The prevention of pressure sores does not require any special skill, provided the nurse is willing to carry out the necessary regular attention to the skin. Incontinence does not necessarily imply the certain development of pressure sores where adequate nursing care is given.

SUMMARY

In the treatment of a fracture of the shaft of the femur early and adequate recovery of knee movement is more important than loss of length up to ¼ in.

In using a Thomas splint with fixed skin traction, the most important points in technique are as follows: the fracture is reduced under full anæsthesia and the skin traction is used only to maintain reduction; traction is maintained with the knee-joint kept in 10° of flexion by means of wool pads and a back splint; counter-traction is upon the ischial tuberosity.

The use of the Balkan beam greatly facilitates nursing care, and helps to maintain general muscular function of all the limbs and the comfort of the patient.

BRONCHOGRAPHY IN CHILDREN

C. ELAINE FIELD, MD LOND, MRCP
FIRST ASSISTANT TO THE CHILDREN'S DEPARTMENT AT UNIVERSITY COLLEGE HOSPITAL, LONDON

SINCE the introduction of iodised oil as a method of investigating the bronchial tree by Sicard and Forestier (1922) many different techniques have been described. In the adult satisfactory bronchograms are obtained by the endotracheal method described by Forestier and Leroux (1923) using local anæsthesia for the skin and cocaine in the trachea. This method was first applied to children by Armand-Delille (1924) but most children have a dread of the needle, and lack of coöperation with crying and coughing causes iodised oil to enter the alveoli of the lung or be coughed up and swallowed, with unsatisfactory bronchographic results. This may be overcome by the original supraglottic method in which the patient puts out his tongue and the iodised oil is dripped over the back of it (Sicard and Forestier 1922 and 1932) or by the nasal method (Forestier and Leroux 1935), in which the tongue is pulled forward and the oil is dripped through the nose. In both these techniques local anæsthesia must be used; children are rather sensitive to cocaine and its equivalents in any quantity, and unless coöperation is really good the oil passes down the œsophagus rather than into the trachea. Bronchography under general anæsthesia is more suitable for children but so far I have failed to find an anæsthetic that is thoroughly satisfactory. Chloroform gives the best pictures but is too dangerous, especially since the child must be sat up during the procedure. Nitrous oxide causes increased respiratory excursions with the result that the iodised oil enters the alveoli of the lung and obscures the picture. Open ether is the anæsthetic of choice but has the disadvantage of causing excessive secretion in the bronchi, especially in areas of bronchiectasis, which may prevent the oil from entering that part of the bronchial tree about which information is specially desired. This disadvantage can be overcome to a certain extent by giving adequate doses of atropine beforehand. Jacoby and Keats (1938) advocate ether anæsthesia and the supraglottic method, and Barsby and Bonham-Carter (1941) recommend ether with the nasal method. Basal narcotics and hexobarbitone have the disadvantage that they fail to abolish the cough reflex.

To overcome these difficulties a technique has been devised which abolishes consciousness of the prick of the intratracheal needle but leaves the child fully conscious during the introduction of the iodised oil. Excellent bronchograms can thus be obtained, and subsequent bronchograms are easier to take because the child, having suffered no pain, is not apprehensive.

TECHNIQUE

The child undergoes preparatory tipping and breathing exercises until the moist sounds in the chest are greatly reduced and the quantity of sputum diminished. On the day of examination, breakfast is omitted and twenty minutes before the operation min. 5–10 of 'Nepenthe' (Ferris) are given. Tipping is continued until the patient is sent for, and on arrival in the X-ray room the procedure is explained to the child and a rehearsal of the positions required is carried out (these will be described later). To give the child no time to develop fears a quick gas and oxygen anæsthesia is administered and the special needle

Fig. 1—Special needle.

(fig. 1) is introduced through the cricothyroid membrane. As soon as the operator is certain, on withdrawing the stilette, that the needle is in the trachea, the child is allowed to come out of the anæsthetic. A hissing noise during respiration, or the withdrawal of air into a syringe are signs that the needle is in the trachea. As consciousness is being regained, min. 5–10 (according to the age of the child) of 2% butethanol ('Decicain') is injected through the intratracheal needle; the patient usually coughs and sprays the solution over the bronchi. The iodised oil is injected when the patient has fully recovered from the anæsthetic. During the next procedure the child, while encouraged not to cough, is kept well tilted to the side that is to be filled until the X rays have been taken.

a b c d e

Fig. 2—(a) Child kept well tilted to the left during whole procedure until X-ray photographs have been taken. (To fill left side only.)

(b) Iodised oil, 2 c.cm., is slowly injected with child leaning backward at 45°; pause of 1 min. after injection. (To fill dorsal and lower lobe branches).

(c) Iodised oil, 2 c.cm., is slowly injected with child leaning forward at 45°; pause of 45 sec. after injection. (To fill anterior branches and middle lobe.)

(d) Iodised oil, 1 c.cm., is rapidly injected with child in the sitting position; child is then immediately inverted over left side of the operating table for 30 sec. (To fill the upper lobe.)

(e) A further 2 c.cm. of iodised oil is injected with child in sitting position; child is then slowly tilted backward through 45° and forward to the sitting position several times. (To ensure complete filling of lower lobe, usually the most difficult to fill.)

Fig. 2 shows the positions required during the introduction of iodised oil, to ensure complete filling of all parts of the left lung.

It is important, after getting the child to adopt each new position, to withdraw air into the syringe before injecting the oil, so as to be certain that the needle is still in the trachea; otherwise oil may be injected into the surrounding tissues. The quantities given (fig. 2) are suitable for a child of 7; for a younger child slightly less oil would be used and for an older child a little more, the dose in either case being kept preferably between 5–10 c.cm. The child is then laid down on the side that has been filled and X-ray photographs are taken. If by this time he has not coughed, he is instructed to give a gentle cough; this helps to give an even spread of the oil. Lateral and anteroposterior X-ray plates are exposed, and then a second lateral, to ensure that a good lateral picture is obtained. Even if the child coughs the pictures are often good. If the radiograms show incomplete filling in any area, more iodised oil can be introduced with the child in the appropriate position.

The method requires a certain amount of coöperation from the child; it is practical for those of five years and over, and even for children under five who happen to be good patients.

For uncoöperative children the less satisfactory method with open ether anæsthesia must be tried. The same technique can be used except that butethanol is not necessary and atropine, gr. 1/100, must be given half an hour beforehand. All procedures are carried out outside the X-ray room, the child being brought in for radiography only, ether and mask being left behind to eliminate the risk of an explosion. Anæsthesia is continued until the radiograms have been seen, when if parts are unfilled more iodised oil can be injected. It is important that the child should at no time be allowed to cough, because the oil enters the alveoli of the lung irregularly when the patient is under a general anæsthetic. The anæsthetic should be given by some one accustomed to the technique. Oxygen can be used with advantage to combat cyanosis but nitrous oxide should never be used when introducing iodised oil because it tends to make the oil enter the alveoli.

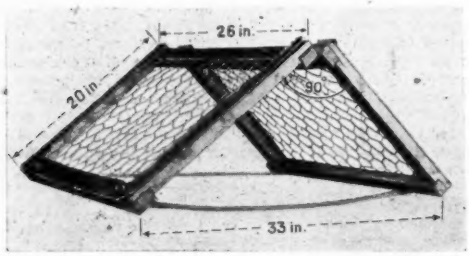


Fig. 3—War-time tipping board made from common materials.

EQUIPMENT

Iodised oil.—'Lipiodol' (Bengué) 40% is recommended but other products such as 'Neo-Hydriol' (M&B) may be used; unfortunately they have an odour which the child dislikes. There is no necessity to heat the iodised oil providing it has been at room temperature for a short time.

The needle (fig. 1) is a modification of Delille's trocar and cannula. It consists of a stilette attached to a handle which fits into a curve needle, the bevel of which is arranged like a lumbar-puncture needle so that it separates the fibres of the cricothyroid membrane and does not cut across them. At the hilt of the needle there is a metal plate with two perforations so that by means of tape it can be held in position like a tracheotomy tube. Two small handles on the upper and lower surfaces of the plate enable the surgeon to take a good grip of the needle. The stilette is prevented from rotating in the needle by a notch on the upper surface. An ordinary 10 c.cm. Record syringe is quite satisfactory for use with this needle, but it must fit well into the needle because withdrawal of air is used as the indication that the needle is in the trachea; should there be a leak a false impression is gained and oil may be injected into the surrounding tissues. The needle should be sharp and the forefinger should be placed on the top of it when introducing it into the trachea because the instrument is delicate and might break at the hilt.

The tipping board (fig. 3) shows a war-time board using the minimum of wood; it can be folded and carried about easily, even by the child himself. Two square frames of wood are hinged together on one side and the opposite sides are connected by two pieces of rope. The angle at the top is 90°, and the length of the base 33 in.; the boards are each 26 in. by 20 in. Strips of canvas or wire netting fill the intervening spaces.

COMPLICATIONS AND DIFFICULTIES

Surgical emphysema is rare if the puncture hole is rubbed vigorously immediately after withdrawal of the needle, to encourage closure of the needle track; it occurred once only in 100 cases. Sepsis around the puncture hole is seldom seen if aseptic technique is practised; it also occurred once in the 100 cases. It is important to make sure that bronchiectatic areas are almost empty of secretion before bronchograms are taken, otherwise filling with oil is inadequate, or septic secretion trickles into neighbouring portions of lung and causes pneumonia. In this series pneumonia developed in one advanced case of bronchiectasis where the cavities could not be sufficiently emptied. The danger of injecting iodised oil into the surrounding tissues rather than the trachea is exaggerated; it should never happen if the syringe fits closely into the needle, and if air is withdrawn into the syringe from the trachea after each new position has been taken up and before the oil is injected. Occasionally the needle catches on the back of the trachea; to correct this, the syringe and the base of the needle must be raised, so that the point of the needle is brought forward. Sometimes there is difficulty in distinguishing the

cricothyroid membrane. In all cases the neck should be extended by placing one pillow under the shoulders; too much extension flattens the trachea and makes introduction of the needle difficult. The first prominent cartilage in the child is the cricoid and the needle is introduced into the V-shaped notch above this; it is a good practice to feel the child's neck while he is still in the ward and also just before the operation, so as to be thoroughly familiar with the anatomy. There should be no ill effects afterwards and usually the child can have a full meal when the action of the butethanol has worn off.

The aim of the operator should be to outline, not fill, the bronchial tree with iodised oil—which should reach just to the alveoli without entering them. Only one lung should be filled (fig. 4) so that a clear lateral picture

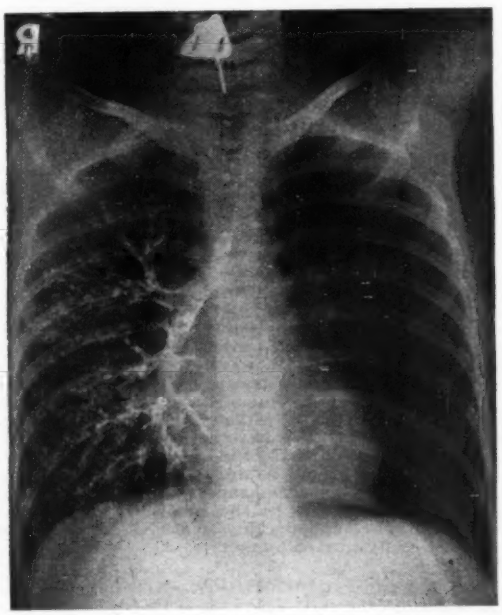


Fig. 4—Anteroposterior radiogram; one side filled.

can be obtained. Usually after 3 weeks of tipping this lung has cleared sufficiently of iodised oil for the other side to be filled.

SUMMARY

A new technique of bronchography in children is described in which they are anæsthetised with nitrous oxide, while a special intratracheal needle is introduced. During the injection of the iodised oil no anæsthetic is administered, since the best bronchograms are obtained in the fully conscious patient.

The method is suitable for children aged 5 years and over. For infants under 5 the less satisfactory method with open ether anæsthesia is used.

A war-time tipping board made with simple materials is described.

I wish to thank Dr. W. J. Pearson, physician to the children's department at University College Hospital, and Dr. W. G. Wyllie at the Hospital for Sick Children, Great Ormond Street, for their help, and Dr. H. N. Webber for his advice on anæsthetics.

REFERENCES

Armand-Delille, P. (1924) *Bull. Soc. méd. Hôp. Paris*, **48**, 344.

Barsby, B. E. and Bonham-Carter, R. E. (1941) *Arch. Dis. Childh.* **16**, 95.

Forestier, J. and Leroux, L. (1923) *Bull. Soc. méd. Hôp. Paris*, **47**, 299; (1935) *Radiology*, **24**, 743.

Jacoby, N. M. and Keats, G. (1938) *Lancet*, ii, 191.

Sicard, J. A. and Forestier, J. (1922) *Bull. Soc. méd. Hôp. Paris*, **46**, 463; (1932) The Use of Lipiodol in Diagnosis and Treatment, London.

SULPHAPYRIDINE ANURIA

A FATAL CASE

J. CARSON
M D BELF, D P H
DEPUTY MEDICAL SUPERINTENDENT, WITHINGTON HOSPITAL, MANCHESTER

G. STEWART SMITH
M D MANC
DIRECTOR OF PATHOLOGICAL SERVICES, MANCHESTER MUNICIPAL HOSPITALS

IT is now admitted that one of the chief disadvantages of sulphonamide therapy is the tendency for these drugs to give rise to renal complications. Sulphanilamide itself, on account of the relatively high solubility of both the drug and its acetyl compound, is almost entirely free from this tendency, but hæmaturia and more severe renal damage have been noted with sulphapyridine and sulphathiazole. Recent reports indicate that sulphadiazine treatment is not free from similar risks. The published work on this subject, mostly American, has been reviewed by Peterson and Finland (1941). From this it appears that various degrees of hæmaturia are common with all the sulphanilamide derivatives, but in most cases there is no evidence of permanent renal damage.

A few cases of sulphapyridine anuria with recovery have been reported in this country (Leedham-Green 1941, Rogan and Cruikshank 1942, Laird 1941, Spence 1941) and the clinical findings in a fatal case have been given by Fletcher (1941). The only report including autopsy findings we have seen in the English journals is that of Whitehead (1941). The case recorded here showed hæmaturia followed rapidly by anuria, confirmed at autopsy as being due to blockage of the ureters with acetylsulphapyridine.

CASE-HISTORY

A man, aged 43, was admitted to hospital on May 30, 1942. Five days previously treatment with sulphapyridine had been begun for lobar pneumonia. He was given an initial dose of 2 g. followed by 1 g. every four hours, receiving in all 22 g. On the day before admission the urine was scanty and blood-stained and sulphapyridine was discontinued. He then complained of pain over the bladder and no further urine was passed. Severe pain in the hypogastrium and the tip of the penis were present on admission. He was quite rational at the time of examination but was reported to have been delirious occasionally. The skin and mucous membranes were pale, the tongue dry and furred. Temperature 98° F., pulse-rate 88 and respirations 28 per min., blood-pressure 130/80 mm. Hg. Slight retraction of the abdomen, which was tender over the whole of the lower half; no loin tenderness; no œdema; fundi normal. A catheter was passed quite easily but no urine was obtained on this or two subsequent occasions. Fluids were taken freely by mouth and he received 3000 c.cm. by intravenous drip, partly 5% glucose saline and partly 4·28% sodium sulphate. On the next day the pain was less severe but the abdomen became more distended and he vomited 10 oz. of fluid. Although he was rather drowsy consciousness was maintained until shortly before death, 40 hours after admission to hospital, no urine having been passed for 60 hours. Twitching of the extremities was not noted at any time. The blood-urea 3 hours before death was 100 mg. per 100 c.cm.

At *autopsy*, 24 hours after death, findings were as follows. Heart (284 g.): a few petechial subendocardial hæmorrhages in the left ventricle. Lungs: about 200 c.cm. of slightly bloodstained fluid in each pleural sac; both lungs congested and lower lobes œdematous. Liver (1247 g.): smaller than normal; surface of coarse morocco-leather type: cut surface confirmed the appearance of multilobular cirrhosis. Spleen (227 g.): enlarged, firm, chronically congested. Urinary tract: kidneys showed similar appearances; the general anatomy was not disturbed, there was no naked-eye evidence of acute nephritis, and stripping the capsule left a smooth normal-looking surface; on each side the pelvis and ureter were greatly dilated (right 0·75 cm., left 1 cm. in diameter) and completely packed with blood-clot mixed with lighter, whitish particles; at the lower end of the ureters were some elongated masses which appeared to be almost entirely crystalline, and it was with difficulty that this material could be "milked" from the ureters into the bladder. The epithelial lining of pelves and ureters showed many blotchy hæmorrhages and there was hæmorrhagic staining of the surrounding connective tissues. The bladder contained a few c.cm. of

thick, slightly bloodstained fluid and the mucosa showed several small hæmorrhages.

Microscopical examination of kidneys.—The lining of Bowman's capsule was swollen, with varying amounts of desquamation. The tufts were not swollen but showed evidence of shrinkage and disintegration. The capsular spaces contained partly amorphous eosinophilic material and partly cellular debris. There was moderate swelling and cytoplasmic granularity of the tubular epithelium, especially of the first convoluted tubules and in most of the tubules there was cellular and amorphous debris. A few of the collecting tubules contained blood and near the pelvis the intertubular vessels were greatly dilated. There was an extensive hæmorrhagic infiltration into the tissues of the pelvis. Frozen sections, examined with crossed Nicol prisms, failed to show any crystalline material in the kidney substance. There was no fatty change in the tubular epithelium. The material from the ureters consisted of blood and masses of crystals, mostly sheaves of elongated needle forms, sometimes shorter rectangular rods found either singly or in groups. The fluid from the bladder contained 47 mg. per 100 c.cm. of total sulphapyridine, only a trace being demonstrable in the free form, and 93 mg. per 100 c.cm. of urea. It contained very large numbers of epithelial cells, blood-cells and other organised material. The white material from the ureters contained 78% acetylated sulphapyridine, no free sulphapyridine being detected.

DISCUSSION

The sequence appears to have been the precipitation of acetylsulphapyridine within the kidney, followed by a massive deposition in the pelvis and ureter leading to hæmorrhagic pyelitis and ureteritis, but there was also evidence of glomerular and tubular damage. It is difficult to say whether the latter changes were due to the direct action of the sulphapyridine or were wholly or in part a secondary effect of the obstruction; but we have observed similar glomerular and tubular changes in the kidneys of rats fed on large doses of sulphapyridine over a period of four weeks and not showing ureteral obstruction. Peterson and Finland give instances of similar lesions and it is significant that Antopol (1940) describes similar changes in the kidneys of a man who died after showing only microscopic evidence of hæmaturia. Whitehead (1941) found crystals in many sections of the kidneys but no sulphapyridine concretions in the ureters. He suggested that the ureters were blocked at their lower ends by subepithelial hæmorrhages.

The solubility of acetylsulphapyridine is about half that of sulphapyridine—34·1 mg. as compared with 61·3 mg. per 100 c.cm. at pH 6·5 (Macartney et al. 1942)—and it seems probable that in patients who develop renal complications there is an idiosyncrasy causing an abnormally high percentage of the drug to be excreted in the acetylated form. It is not possible to prove this point in this particular case since estimations of the free and acetylated sulphapyridine in blood and urine before the onset of anuria were not made. As in the other reported cases the total amount of sulphapyridine given does not appear to have been the determining factor. This patient received 22 g. over four days; Rogan and Cruikshank's case had 15 g. in two days; Leedham-Green's 12 g. in three days; and Whitehead's 17 g. in forty hours.

Several writers (Leedham-Green 1941, Backhouse 1939) emphasise that treatment with large amounts of fluid and with alkali may be effective. In our case it is noteworthy that the patient had been having an alkaline mixture on account of gastric symptoms for twenty-four hours before receiving sulphapyridine, and he continued to take alkalis throughout the illness. In any event it seems very doubtful whether the urine can ever be made sufficiently alkaline to increase the solubility of acetylsulphapyridine materially. This patient was reported to have taken fluids freely at home, and during two days in hospital he took at least 4½ pints by mouth and 3000 c.cm. by intravenous drip. Ureteric lavage was not attempted and it is impossible to state what the result of this would have been if carried out at an early stage. Judging from the condition at autopsy, where pelvis and ureter were found to be packed with clot and crystals throughout their course, it is difficult to imagine that the procedure could have been successful in the later stages of the illness.

SUMMARY

The clinical and post-mortem findings are recorded in a case of sulphapyridine blockage of the ureters after a total dosage of 22 g. The lesion was essentially a hæmorrhagic pyelitis and ureteritis, following massive deposition of acetysulphapyridine.

REFERENCES

Antopol, W. (1940) *J. Urol.* **43**, 589.
Backhouse, T. C. (1939) *Lancet*, ii, 736.
Fletcher, F. R. (1941) *Brit. med. J.* i, 242.
Laird, S. M. (1941) *Lancet*, ii, 272.
Leedham-Green, J. C. (1941) *Brit. med. J.* i, 586.
Macartney, D. W., Luxton, R. W., Stewart Smith, G., Ramsay, W. A. and Goldman, J. (1942) *Lancet*, i, 639.
Peterson, O. L. and Finland, M. (1941) *Amer. J. med. Sci.* **202**, 757.
Rogan, J. M. and Cruikshank, E. K. (1942) *Brit. med. J.* i, 757.
Spence, H. M. (1941) *Brit. J. Urol*, **13**, 16.
Whitehead, N. T. (1941) *J. R. Army med. Cps*, **77**, 145

SULPHAPYRIDINE ANURIA
TREATED BY CYSTOSCOPY AND URETERIC CATHETERISATION

R. C. S. BENSON M B LOND
R. C. PERCIVAL F R C S, M R C O G

TEMPORARY SURGEON LIEUTENANTS RNVR AT A ROYAL NAVAL AUXILIARY HOSPITAL

ANURIA during the administration of one of the sulphonamide drugs is an uncommon but serious complication. Finland and his associates (1941), in reporting a series of 446 cases of sulphadiazine therapy, noted that gross hæmaturia and anuria occurred in 1 case only. A number of cases have been reported, chiefly from America, in which ureteric catheterisation was successfully employed. Laird (1941), however, in a paper concerning 794 cases of gonorrhœa treated with sulphapyridine, reported gross hæmaturia in only 5 cases and anuria in 1, the latter responding to catheterisation of one ureter. While but few fatal cases have been recorded, it is considered that, in view of the wide use of sulphonamides, further attention should be drawn to this serious complication and its prevention, and to a safe and successful method of treatment. In the following case, anuria complicating the sulphapyridine treatment of pneumonia was successfully treated by ureteric catheterisation.

CASE-RECORD

A well-built chief petty officer, aged 38, began his illness at sea nine days before admission with general malaise, cough and pain in the right chest. Three days later, when he reported sick, bronchopneumonia was diagnosed and sulphapyridine therapy begun, a total of 21 g. being given during the next three days. It was discontinued on the fourth day of treatment, by which time he was apyrexial and the chest condition progressing satisfactorily. No vomiting had taken place. Thirty-six hours after the cessation of sulphapyridine, he suddenly experienced burning pain in the penis and passed a small quantity of blood-stained urine. There was no history of any earlier dysuria or hæmaturia, but no record of fluid intake or output had been kept for the preceding twenty-four hours. However, a few hours previously, he was stated to have passed a usual amount of apparently normal urine. On admission to this hospital six hours later, on July 16, 1942, he complained of a constant, severe, aching pain in both loins and had persistent urgency but could void no urine. The only other complaints were of nausea and flatulence, and he had vomited shortly before admission.

His previous history included an illness presenting the features of acute nephritis at the age of 15 years. Since then there had been no symptoms suggestive of permanent renal damage.

He was suffering fairly severe pain. His temperature was 97·6° F., pulse-rate 68 and respiration 28 per min. His complexion was sallow, and tongue slightly furred. Movement of the right hemithorax was moderately impaired, with slight dullness on percussion in the right lower axilla. Many fine and medium crepitations were also heard in this area, and the signs were considered to be those of an area of consolidation undergoing resolution. The abdomen was soft but there was extreme tenderness in both loins, particularly the right. There was no tenderness on firm palpation over the bladder.

BP 165/95 mm. Hg. On passing a catheter 1 oz. of almost pure blood was obtained. Morphine gr. ¼ and atropine gr. 1/75 were administered and the dose repeated after an hour owing to persistent pain and restlessness. Intravenous infusion with 2½% sodium citrate was commenced immediately; temporary suspension was necessary after 2 hours because of a moderately severe rigor. He was encouraged to take as much fluid by mouth as possible but even small amounts of sweetened cordial were returned. Twenty-four hours after the original onset of urinary symptoms, the pain in the loins had diminished and the left loin was only moderately tender. The blood-urea was 36 mg. per 100 c.cm. and the blood-pressure had fallen to 120/80 mm. Hg. At the end of 36 hours—30 hours after the beginning of treatment—he had still passed no urine in spite of intravenous infusion with 12½% glucose, hot poultices to the loins, and repeated warm colonic irrigations. The total fluid intake by this time was 5 pints, of which only ½ pint had been taken by mouth; 22 g. of sodium citrate had been administered intravenously. The pulse was satisfactory and he no longer complained of pain, though there was still aching in the loins. The complexion had assumed a muddy tint, some moist crepitations were now audible at the bases of both lungs, and his general condition was considered to be deteriorating. Operation was decided on.

At 10 P.M. on July 17 cystoscopy was performed. The bladder contained ½ oz. of very dark amber-coloured urine. The trigone was much congested with areas of submucous hæmorrhage and small scattered deposits of crystalline yellowish-brown and silvery debris. Both ureteric orifices were very œdematous, the right being extremely difficult to locate owing to locally adherent debris and clot. No flow was visible from either orifice. A No. 6 Nyland catheter was inserted into the left ureter with some difficulty owing to local distortion, and passed reluctantly, with a grating sensation for the first 5 cm. After the initial resistance had been overcome, the catheter passed easily and without hindrance to the renal pelvis and dark amber-coloured urine escaped at a rapid drip. The right ureteric orifice was completely blocked by a small, hard, protruding concretion which was dislodged with difficulty. The catheter met no further obstruction in the right ureter, from which urine of similar characteristics to that of the left escaped. The urine from both catheters, which were left in place, was acid.

Further analysis of the urine from the bladder revealed many red cells and sulphapyridine crystals. The crystals have a characteristic appearance, being slender and sharp-pointed and clustered together in bundles like sheaves of wheat. No crystals were found in the ureteric specimens, both of which contained many red cells and debris. The sulphapyridine content of each was: left, 192 mg.; right, 217·5 mg. per 100 c.cm.

The patient's general condition rapidly improved after the operation and the output from each ureter for the next 12 hours was 23 oz. of heavily blood-stained urine. Vomiting had ceased, so that fluids were given by mouth, the intake for the first 24 hours being 8½ pints, and output 7 pints. Temporary blockage of one or other catheter was relieved by irrigation with sterile saline and both were finally removed after 60 hours. Macroscopic hæmaturia ceased after 48 hours and microscopic after 96 hours. Intake and output thereafter remained entirely satisfactory.

Further cystoscopy six days later (July 23) showed great improvement in the appearance of the trigone, though both orifices were still surrounded by œdema and submucous hæmorrhage. Catheterisation was easy and revealed no obstruction. Dye excretion from both kidneys was normal. Examination of the urine on Aug. 1 showed sp. gr. 1014, acid reaction, a faint haze of albumin and microscopically a few pus cells; the blood-urea and renal function tests were normal.

DISCUSSION

This case presents many of the features noted in those previously published, but he came under our care too late in the illness to allow us to observe events immediately preceding anuria. Seligman (1941) has reported a case of anuria following only 8 g. of sulphathiazole during which vomiting was excessive. He pointed out that excessive vomiting may play an important part in causing concentration of the drug in the urine with subsequent ureteric obstruction from acetyl sulphathiazole crystals. It is noteworthy that vomiting was not a complication of sulphapyridine therapy in our case. Thompson and others (1941), in a report of a case of anuria following sulphadiazine therapy, doubted the significance of an alkaline urine in preventing crystalluria, for the reaction of the urine in his particular case proved to be alkaline in every specimen save one. Thus, the use of alkali, even when given early, is not proof against acetylisation. In any event, the administration of alkali in an established case of urinary suppression could hardly be expected to affect the reaction of the urine, since the kidneys are not secreting—a point borne out by observations in the present case.

With regard to the prodromal signs of anuria, particular attention should be paid to the urinary output since in Thompson's case the output began to fall slowly on the third day and after 11 g. of sulphadiazine; there was no gross hæmaturia. However, complete anuria did not develop until the eighth day, by which time 38 g. had been given. Nausea and vomiting were absent throughout. The importance of the urinary output has also been stressed by other observers (Carrell, Shea and Pike 1940, Laird 1941, Schulte, Shidler, and Niebaner 1942). From the published work it appears that oliguria and anuria may follow the administration of even small total quantities of this group of drugs, again emphasising the importance of close observation on the urinary output throughout chemotherapy. Laird emphasises also the importance of maintaining a daily fluid intake of at least 3000 c.cm. prophylactically as well of making frequent examinations for microscopic hæmaturia.

Concerning the pathology of sulphonamide anuria, there is much evidence that mechanical obstruction takes place in the pelvis and ureter rather than in the renal parenchyma. Apart from the support given to this contention by successful ureteric catheterisation in these cases, further evidence is found in the post-mortem records of a case described by Schulte and others (1942), in which death occurred 11 days after pneumonectomy; 54 g. of sulphadiazine had been given and at autopsy yellowish-orange granular deposits were found in the right renal pelvis and throughout the course of the right ureter; careful histological examination of both kidneys failed to demonstrate any crystals in the renal tubules. Another fatal case has been recorded by Backhouse (1939) in which post-mortem examination revealed sulphapyridine calculi causing obstruction at the lower ends of the ureters, both of which contained urine under pressure. The rationale of ureteric catheterisation thus appears to be established, and is borne out by its successful employment in the reported cases. Tsao as early as 1939 described a fatal case of anuria after sulphapyridine therapy, and attributes the death of the child to concretions completely blocking each ureter; he said that the assistance of a urologist might have saved life. Laird (1941) also considered ureteric catheterisation a life-saving operation in his case and suggested that an arbitrary period of 12 hours anuria was sufficient indication to perform this operation in every case. Rogan and Cruickshank (1942) have described a case of sulphapyridine anuria treated by 'Inductotherm' applied to the loins, and advise that this method should be tried before resorting to ureteric catheterisation. They agreed, however, that if the condition was due to uretero-vesical obstruction catheterisation would be required. Inductotherm treatment would admittedly be valuable if obstruction could be shown to occur in the kidneys, but the site of the obstruction can only be determined by cystoscopy and catheterisation, and the use of short-wave apparatus in war-time, unless it is efficiently screened, is prohibited.

In the prevention of oliguria, a large fluid intake throughout chemotherapy is of prime importance.

REFERENCES

Backhouse, T. C. (1939) *Lancet*, ii, 736.
Brink, N. and Shandorf, J. (1941) *J. Lancet*, **61**, 480.
Carroll, G., Shea, J. and Pike, G. (1940) *J. Amer. med. Ass.* **114**, 411.
Finland, M., Strauss, E. and Peterson, O. L. (1941) *Ibid*, **116**, 2641.
Laird, S. M. (1941) *Lancet*, ii, 272.
Rogan, J. M. and Cruickshank, E. K. (1942) *Brit. med. J.* i, 757.
Schulte, J., Shidler, F. and Niebaner, J. (1942) *J. Amer. med. Ass.* **119**, 411.
Seligman, B. (1941) *Urol. cutan. Rev.* **45**, 753.
Thompson, G., Herrell, W. and Brown, A. (1941) *Proc. Mayo Clin.* **16**, 609.
Tsao, Y. (1939) *J. Amer. med. Ass.* **113**, 1316.

A WATER-BORNE OUTBREAK OF PARATYPHOID B FEVER

D. J. JONES
M B WALES, D P H
MEDICAL OFFICER OF HEALTH FOR BRIXWORTH

P. G. H. GELL
M B CAMB
EMERGENCY PATHOLOGIST, PUBLIC HEALTH LABORATORY, NORTHAMPTON

R. KNOX, M D LOND, M R C P
EMERGENCY PATHOLOGIST, PUBLIC HEALTH LABORATORY, LEICESTER

IN July, 1941, there occurred in the village of Brixworth, Northants, an outbreak of paratyphoid B fever which, though small, was of interest because epidemiological inquiries led decisively to the conclusion that the source was an infected water-supply, and this conclusion was confirmed by the discovery on several occasions of *Bacterium paratyphosum B* in the water.[1]

On July 10, four cases of enteric fever were diagnosed on clinical grounds in Brixworth. The symptoms were frontal headache and diarrhœa of several days' duration and the signs fever, sweating, furred tongue and in three cases rose spots. All were removed next morning to the isolation hospital. The sera of all four patients showed agglutinins in high titre for *Bacterium paratyphosum B*, which was isolated from fæces and urine.

All four patients were living in a group of seven cottages in Brixworth, but four different households were involved. The water-supply was pumped from a well and shared by the inhabitants of the cottages. Immediate instructions were given to all the residents to boil all water and milk until further notice. Bacteriological examination showed the milk to be satisfactory but a sample of the water collected on July 12 was heavily polluted and gave a fæcal coliform count of 1800 per 100 ml. The pump handle was therefore chained on July 14. Next day a report was received from Northampton EPH Laboratory that from the sample of water collected on July 12 *Bact. paratyphosum B* had been isolated. In the meantime, blood samples had been taken from all adults living in the seven cottages ; four of these agglutinated *Bact. paratyphosum B* H or salmonella group suspension to titres ranging from 1/50 to 1/250. All four were removed to hospital and were found to be excreting *Bact. paratyphosum B*. Two of them admitted to having had diarrhœa as the sole symptom within the previous 5–7 days. Later it was found that one of these four, Mr. A. B., had had about 3 weeks previously an attack of diarrhœa which came on suddenly and lasted two or three days. On July 15 blood samples were taken from all of thirteen children living in the cottages. Nine showed agglutinins to a significant titre with *Bact. paratyphosum B* H or salmonella group suspensions. Most of these children had had no symptoms ; all nine were however removed to hospital, and were subsequently found to be infected by isolation of *Bact. paratyphosum B* from their excreta. Careful watch was kept on the remaining occupants of the cottages, and at intervals specimens of blood, fæces and urine were examined bacteriologically. In the next few days two married women and a girl, whose blood had previously shown agglutination to 1/50 with salmonella group suspension, were found either to be excreting *Bact. paratyphosum B* in the fæces or to show significant agglutination with *Bact. paratyphosum B* H or salmonella group suspensions. The son of one of these women was found to have paratyphoid B in a specimen of fæces taken on July 31. No further cases were discovered.

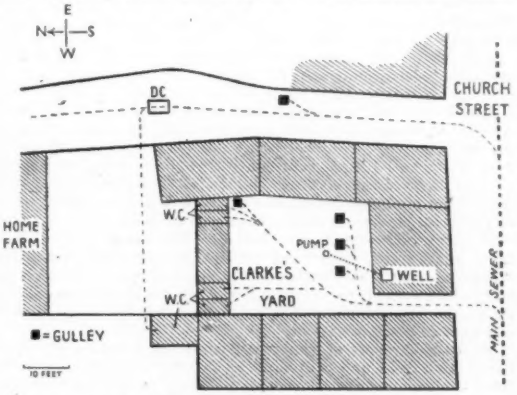
The population at risk in the cottages was 34 ; of this no fewer than 21 (in fact, all of those suspicious on clinical or serological grounds) were found at one time or another to be excreting *Bact. paratyphosum B* in the fæces. Only four of these can be described as typical clinical cases.

SANITATION AND DRAINAGE

The area concerned in the outbreak was a group of seven houses. Two of these had been the subject of action by the local RDC under the Housing Acts, and the owner had given an undertaking not to permit the houses to be used for human habitation. The houses were however reopened for the reception of bombed-out families from London.

The seven houses were grouped around a closed yard, the entrance to which was through a narrow alley-way (see figure). The site was a good example of the old type of court. The water-supply to these seven houses was from a pump at least 50 years old. The water actually collected in a small brick chamber in the basement of one of the houses and was piped thence to the pump in the centre of the yard. The well was approximately a 2 ft. 6 in. cube with a 2 ft. depth of water in it ; it lay 4–5 ft. below ground level, and had been subject to flooding from surface water in the yard during heavy rainstorms. The distance from the well to the pump was 15 ft. The well held 30–35 gallons of water. It was very rapidly emptied, taking half an hour to refill.

The houses round the court were served by four hand-flushed closets. The sewage from these discharged into pipes which ran within a few feet of the pipe connecting the well and the pump, and then passed out of the court in the line of the alley-way to enter a sewer under the roadway south of the court. The closets and drainage had been in existence at least 50 years according to one of the oldest residents. There were in addition four gulleys which entered the drains at various points in the yard.



Plan of the area in which the cases occurred.

As soon as *Bact. paratyphosum B* was found in the water, the drainage of the area adjacent to the court was investigated. From the diagram it can be seen that there were three possible sources from which the well might have been infected—the drainage of the farm on a slightly higher level to the north of the court, the drainage of the court itself, and the main sewer under the roadway. Fluorescein tests suggested that all three systems might be defective ; direct inspection showed defects in the first two sets of drains but the main sewer was not inspected. That the source of infection was very close to the well is suggested by the fact that despite careful inquiry not a single case of infection was detected in the village apart from the inhabitants of the court. The farm above the court can almost certainly be excluded, for repeated examination of blood, fæces and urine from its eight inhabitants yielded negative results. In the village itself across the road from the court at a distance of 50–100 yards there were three wells which, after the fluorescein test, showed the colour of the dye. This may have been due to a leak in the main sewer or possibly to an abnormally heavy fall of rain which occurred immediately after the test. None of the consumers of water from these wells had any ill effects and all the families concerned were investigated with negative results. It seems therefore most likely that the water in the well became infected from some point in the drainage system of the court itself.

Action taken by the local authority.—The main features of the action taken by the local authority in controlling the outbreak were as follows.

1. Epidemiological inquiries were made by one of us (D. J. J.) with the help of the Brixworth sanitary inspectors and later of Dr. Fleming of the American Red Cross, and in consultation with the regional medical officer of the Ministry of Health and Dr. Smith, county medical officer. The laboratory work was carried out at the Emergency Public Health Laboratories at Northampton and Leicester ; in addition, one sample of water was examined at the EPH Laboratory at Oxford.

(1) Careful supervision of the population at risk, including occasional week-end visitors of the evacuee families. Communications were sent to the medical officers of health of the areas in London where the persons resided and they were followed up there with negative results.

(2) Fullest use of laboratory facilities and close collaboration with the laboratory workers.

(3) Immediate removal to hospital of all ascertained cases, including many that would not have been diagnosed at all without strict and repeated bacteriological control.

(4) Preliminary instructions on July 10 to boil all water and milk, followed on July 14 by cutting off the water-supply. By July 18 main water-supply was laid on to the houses of the court, taps being installed in the yard.

(5) Relaying of all defective drainage in the properties concerned.

SOURCE OF THE OUTBREAK

The only factor common to the inhabitants of the court and not shared by the rest of Brixworth was the water-supply, which for this reason alone was strongly suspected from the start. Bread and milk could be dismissed as possible sources of the outbreak ; blood and two samples of fæces and urine from all the staff of the bakery and dairy supplying the court were investigated, with negative results. Suspicion of the water was strengthened by the very high proportion of cases among the population at risk (21 out of 34), and by the fact that no cases occurred in the rest of the population of Brixworth, a village of some 2000 inhabitants. The isolation of *Bact. paratyphosum B* from the water collected on July 12 completed the chain of evidence.

The method by which the water became polluted can only be guessed at. Several recent cases of paratyphoid B fever in the neighbourhood had to be considered. Earlier in the year there had been a small outbreak in a residential school 6 miles to the east. Three weeks before the outbreak in the court a sporadic case occurred in a village 2 miles to the west and almost at the same time a case was notified in a village 6 miles to the north. No connexion between any of these cases and the outbreak in the court could be traced. Careful inquiries showed that five of the patients in the court had had attacks of diarrhœa in April. These may have been the result of some non-specific pollution of the well, but it is possible that they were mild cases of paratyphoid fever and that one or more of them had continued in the carrier state up to July. Laboratory examinations in July showed that all of these five were excreting *Bact. paratyphosum B* and gave significant serum reactions to *Bact. paratyphosum B* H and O and also to salmonella group suspension, but these findings could not be expected to give any indication as to when the infection was contracted. Search was made for a possible carrier among the other residents or visitors of the court. The only persons against whom there was any suspicious evidence were Mr. A. B. and Mrs. C. D. Mr. A. B. gave a history of having had a bad attack of diarrhœa 3–4 weeks previously. This man was not ill at any time during the actual outbreak : four specimens of fæces were examined and only one, collected on July 19, was positive. His serum showed agglutinins with *Bact. paratyphosum B* H suspension to a titre of 1/125 but a second examination of his blood was not made. Repeated specimens of urine gave a negative result. He had been in the last war, but could give no history of past inoculations. Mrs. C. D. was also found to be excreting *Bact. paratyphosum B* in the fæces on only one occasion. No decisive evidence against either of these could be found. It is clear that the sanitation of the court was crude and that, given a single case or carrier, infection of the water-supply was almost inevitable. Whether all the remaining 19 cases were infected directly from the water or from personal contact cannot of course be determined. The first cases were reported on July 10, the last case on July 31, so that some may have been secondary.

Bacteriology.—There is no doubt that the organism isolated from the water was *Bact. paratyphosum B*. This organism was isolated from samples of the well water collected on July 12, 15, 18 and 21, and Aug. 6. It is quite plausible that the water first became infected about three weeks previously, and thereafter remained so until all carriers or cases had been removed from the court.

The infection in the water was certainly heavy. Northampton isolated *Bact. paratyphosum B* on three occasions. Oxford reported the isolation of *Bact. paratyphosum B* from nine out of twelve 5 ml. quantities from the sample collected on July 18 —a sample which travelled for three days before reaching the laboratory. Leicester isolated *Bact. paratyphosum B* from as little as 0·1 ml. of a sample of water collected on July 21. All three laboratories agreed that the organism isolated from the water was predominantly in the group phase, but type-phase colonies were found in some samples after careful search, and Oxford reported : "As the organism was in the group phase suitable subcultures had to be made to obtain the type phase. When this was obtained it was found to have agglutinated to full titre with serum prepared against *Bact. paratyphosum B* H and O." Northampton and Leicester used tetrathionate broth as the culture medium followed by plating out on to eosin brilliant green methylene-blue agar (Knox, Gell and Pollock in the press). Oxford used Kauffmann's brilliant green bile tetrathionate broth. At Leicester *Bact. paratyphosum B* was isolated in nearly pure culture by the use of tetrathionate broth with a formula known to be considerably more inhibitory than Muller's or Schäfer's medium.[1] It is interesting to note that the organisms from the fæces of persons who drank the water were also predominantly in the group phase, though in a few specimens the type phase predominated and in repeated specimens from the same patient the group phase might replace the type phase or vice versa. The sera examined also showed some very high titres with salmonella group suspensions. In one of the early cases the agglutinins were : *Bact. typhosum* O 1/50, H negative at 1/25, *Bact. paratyphosum B* O 1/500, H 1/250 trace, salmonella group 1/25,000. The relative titres with *Bact. paratyphosum B* H and salmonella group suspensions did not appear to be closely related to the predominance of type or group phase in the fæces of the same individuals.

Fully authenticated outbreaks of water-borne paratyphoid B fever are rare. In several outbreaks water has been strongly suspected,[2] but bacteriological confirmation has been lacking. There is a report [3] of a small domestic outbreak in Schleswig-Holstein in which *Bact. paratyphosum B* was found in water from a well supplying the household involved. In the Brixworth outbreak the evidence of a water-borne infection is complete though the original source from which the water became infected could not be discovered.

SUMMARY

An outbreak of paratyphoid fever at Brixworth is described, in which 21 out of 34 residents in a group of seven cottages built round a court containing a pump from a shallow well proved to be infected. From its mode of onset and distribution the outbreak was thought to be water-borne. This was confirmed by the isolation of *Bact. paratyphosum B* from five different samples of the well water in three different laboratories. The way in which the well became infected was not discovered, but there was ample opportunity for infection to have occurred by pollution of the ground in the vicinity.

We are indebted to Dr. C. B. Hogg, superintendent of Kettering Infectious Diseases Hospital, for supplying us with information about the patients under his care.

1. Formula of medium used. To 42 c.cm. of broth sterilised with 2·5 g. chalk were added 3 c.cm. of phenol red solution, 20 c.cm. of 24·8% (molar) sodium thiosulphate solution, 5 c.cm. of 12·7% (normal) iodine, and finally 30 c.cm. of the sample of water.
2. Annual Report of the Ministry of Health, 1926, p. 48 ; 1933, p. 47 ; 1935, p. 38. Annual Report of the MOH for Lowestoft 1935, p. 62.
3. *Water Pollution Research*, 1940, **13**, 236.

INSTRUCTIONS FOR MEASURING INSULIN.—Dr. S. L. Simpson has made a valiant attempt to minimise mistakes in the injection of insulin by means of diagrams of syringes on which the doctor marks on the barrel how far the piston should be withdrawn for so many units of insulin. These have proved useful at Willesden General Hospital diabetic clinic and the diagrams are now published as a stiff four-page folder (H. K. Lewis. 6*d*). Of course no card can replace personal demonstration, but it may serve well as an aide-mémoire to the instructed patient. The simplification has perhaps been carried too far as only one strength of insulin, 40 units per c.cm., is mentioned.

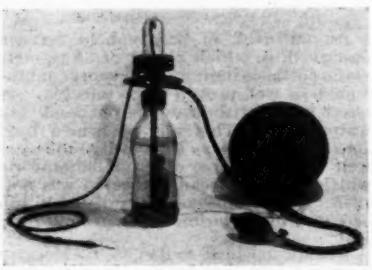
PORTABLE APPARATUS FOR CONTINUOUS INTRAVENOUS THERAPY

B. G. B. LUCAS, MRCS, DA A. L. SIMS
ACTING SQUADRON-LEADER RAFVR

THE apparatus described in this paper was designed primarily for the continuous administration of intravenous anæsthetic solutions, but it can also be used for the intravenous injection of blood or other fluids. Of the many forms of apparatus in use, none appear completely satisfactory. An inverted reservoir on a stand is clumsy and easily knocked over, whereas if positive pressure is used the apparatus tends to leak. Again, the rubber parts of most machines perish rapidly with continual sterilising, and constant replacements are necessary.

It was finally decided that an intravenous apparatus must be portable and not occupy any more space than is absolutely necessary (this ruled out a gravity feed in favour of some form of positive pressure apparatus); it must be completely safe so that under no circumstances can air be injected into the patient, even if the bottle is knocked over accidentally or becomes empty; it must fit a standard bottle (the EMS blood-transfusion bottle was chosen as the standard); it must be reliable, robust and hard-wearing, have an adjustable and clearly visible drip feed, and be easy to sterilise. In order to meet the need for hard wear we decided to reduce glass and rubber to a minimum, and to build the apparatus of metal. Brass was chosen for its easy machinability and cheapness of manufacture. All metal parts were afterwards silver-plated.

The apparatus [1] (see figures) consists of a screw cap through which passes a long tube reaching to the bottom of the bottle. At the lower end of this tube is incorporated a float valve which, by its own weight, will cut off the supply of liquid when the bottle is nearly empty. The float being hollow normally rests against the upper screw, but when the bottle is empty it falls, sealing the rubber opening. The flow is controlled by a system of



three flat plates. The top and bottom plates are fixed, but the middle one is freely movable in any direction. The plates are held together by three spring screws. All three have a hole through their centre. If the middle plate is moved slightly off centre the flow through the holes in the plates will be altered. Also, if the bottle is knocked over, the middle plate, as it is larger than the greatest diameter of the bottle, will be pushed sideways so stopping the flow completely. In this way the three plates serve both as a means of controlling the flow and as a safety device.

The glass drip bulb is a 'Pyrex' test-tube chosen for its strength and ease of replacement. This is held in place by a rubber gland, compressed by a surrounding hand nut. In course of time the rubber perishes and tends to leak; the gland can then be further compressed, so keeping the junction air-tight. Apart from the rubber washer inside the cap which fits on the bottle, the only other perishable part of the apparatus is the rubber seat of the float valve. This, however, is merely a short piece of ordinary rubber tubing and can easily be replaced. Positive pressure is supplied by a small hand bellows, a football bladder acting as an air reservoir. The bladder was adopted because it permits enough reserve of pressure to last a whole bottleful. The remainder of the apparatus, the outlet tubing and intravenous needle, are similar to those on the usual drip transfusion apparatus.

The apparatus is sterilised by boiling for 20 min. in the usual way. It is then screwed on to an ordinary EMS transfusion bottle in which is placed the desired anæsthetic solution.

This apparatus has been tested and used over a considerable period and in our opinion greatly simplifies intravenous anæsthesia. It is completely reliable and foolproof, and can be easily cleaned and sterilised. When not in use it is left on the shelf and is boiled up only when required.

1. For further constructional details see *J. sci. Instrum.* September, 1942.

PREPARATION OF ANTISCORPION SERUM

USE OF ATROPINE AND ERGOTOXINE

AHMED HASSAN MOHAMMED, PH D CAIRO
(*Physiological Laboratory, Faculty of Agriculture, and Biochemical Laboratory, Faculty of Medicine, Fouad I University*)

IN an unpublished MSc thesis in 1937 I described the preparation of a crystalline toxin from a mixture of the poisons of the three most common Egyptian scorpions, but chiefly that of *Buthus quinquestriatus*. This was a secondary proteose which caused both sympathetic and parasympathetic stimulation. Its main effects were (*a*) inhibition of smooth muscle, (*b*) acceleration of the isolated heart (antagonised by ergotoxine), (*c*) rise of blood-pressure (reversed by ergotoxine), (*d*) hyperglycæmia and glycosuria, (*e*) vomiting and contraction of the intestine and bladder in the intact animal (antagonised by atropine).

The effects of poisoning by the toxin in rats can thus be combated by the use of either atropine or ergotoxine alone or more effectively by a combination of the two drugs.

I have since made some further observations (unpublished PhD thesis in 1939). These show that the scorpion toxin has a specific absorption band (crude 260μ; pure 278μ). The different toxins and venoms obtained from four species—*B. quinquestriatus*, *B. leptochelys*, *B. acutecarinatus* and *B. hottentotta minax*—gave the same band. This band is a direct indication of the potency of the toxin or venom solutions as affected by reagents or temperature. Thus dilute alkali, acetaldehyde and formaldehyde inflect the band and diminish the toxicity. Scorpion toxin produces the same rise of blood-pressure whether the animal injected with it is adrenalectomised, spinal or spinal adrenalectomised. It also acts in exactly the same way as adrenaline on blood-vessels, whether they are innervated or denervated, ergotinised or not—in other words, the toxin is a vasoconstrictor to either innervated or sympathectomised blood-vessels. That is, it acts on the blood-vessels themselves as well as on their sympathetic nerve-supply. It can be concluded from these experiments that the toxin directly stimulates the nerve-endings of the autonomous system without selection.

I have shown that in dogs, though neither atropine nor ergotoxine alone is effective, a mixture of the two drugs prevents the onset of symptoms, and that ergotamine tartrate ('Femergin' Sandoz) can effectively replace this mixture. For a dog 1 m.l.d. is 0·03 mg. per kg., and for an animal weighing 6 kg. 2 m.l.d. is therefore 0·36 mg. of toxin. A mixture of atropine and ergotoxine protected a dog from this dose, which is large compared with the amount which can be delivered by a scorpion at a single strike. A fully grown specimen of *B. quinquestriatus* excited and made to strike seven times through a rubber membrane yielded only 0·5 mg. of toxin. Another scorpion of the same species made to strike three times gave only 0·2 mg. and by electrical stimulation of a living specimen 0·6 mg. of toxin was obtained. Since in the majority of cases the victims are only struck once it should be possible to prevent the occurrence of symptoms either with a mixture of atropine and ergotoxine or better still with ergotamine tartrate.

In the preparation of antiscorpion serum, formol toxoid (Shousha [1]) has been used for the early stages of

1. Shousha, A. T. *Congr. int. Méd. trop.* 1928, **3**, 95.

active immunisation. In the present paper it is shown that toxin may be used from the outset if the toxic effects are masked by the use of atropine and ergotoxine or ergotamine tartrate, or much better by using femergin and 'Bellafoline' (Sandoz) together.

EXPERIMENTAL FINDINGS

In dogs.—Fourteen dogs were immunised in the course of 5½ months by subcutaneous injections of toxin at 5-day intervals. In seven the symptoms of the early doses were masked by the simultaneous injection with each dose of toxin of 0·033 mg. atropine per kg. and 0·005 mg. ergotoxine per kg., and in the remainder by 0·04 mg. per kg. of ergotamine tartrate per kg. By the time the animals had become actively immune to 5 m.l.d. (0·165 mg. toxin per kg.) it was no longer necessary to use the pharmacological antagonists to protect them. After some loss of weight in the early stages the animals returned to their early weight and remained in good condition throughout. One dog after this course of immunisation was immune to 150 m.l.d. and another to 55 m.l.d.

In these dogs the antitoxic titre of the serum was tested by the method of Shousha,[1] various quantities of serum being added to 2 m.l.d. of toxin, incubated for an hour and injected subcutaneously into albino rats weighing 100 g. The m.l.d. for rats of this weight is 0·02 mg. of toxin. Rats which received mixtures containing 0·4, 0·2, 0·1, 0·066 and 0·05 c.cm. of serum from one of the immunised dogs survived, whereas those receiving 0·04 and 0·033 c.cm. of serum died; 1 c.cm. of serum would therefore neutralise at least 40 rat m.l.d.s.

In rabbits.—Twelve rabbits were immunised by subcutaneous injection of toxin in the same manner. In six 0·4 mg. atropine per kg. and 0·03 mg. ergotoxine per kg., and in six 0·5 mg. of ergotamine tartrate per kg. was given subcutaneously with the toxin for the first twelve injections. The injections were given at intervals of 5 days.

Rats injected with mixtures of 2 m.l.d. of toxin incubated with 0·2 to 0·033 c.cm. of serum from a rabbit immunised with toxin plus ergotamine tartrate survived, whereas those receiving mixtures containing 0·028 and 0·025 c.cm. of the same serum died. The serum of this rabbit therefore neutralised 60 rat m.l.d.s of toxin per c.cm.

In goats.—Six goats were immunised by subcutaneous injection of toxin, and for the first twelve injections three were protected with atropine and ergotoxine and three with ergotamine tartrate. They were then receiving 10 mg. of toxin, and 4 months later without any further antidote treatment they were all immune to 175 mg. of toxin. The serum tested in the laboratories by Dr. H. Ibrahim of the ministry of health was found to be much stronger than that issued from the Lister Institute, 1 c.cm. neutralising up to 130 m.l.d. for 100 g. rats.

With the object of employing a belladonna derivative of constant qualities bellafoline was employed instead of atropine. Bellafoline combined with femergin gave better and quicker results. Two goats were immunised by subcutaneous injection of toxin, and for the first four injections were protected with bellafoline and femergin. They were then receiving 20 mg. toxin, and 1½ months later without any further antidote treatment they were both immune to 200 mg. of toxin. The serum, tested in the laboratories of the Agouza Serum Department of the Ministry of Health, was found to be highly potent.

CONCLUSIONS

If the sympathetic and parasympathetic nervous systems are first paralysed with atropine and ergotoxine or with ergotamine tartrate lethal doses of active scorpion toxin can then be injected without harm.

Neither of these antidotes interferes with the antigenic power of the active toxin, and dogs, rabbits and goats injected with active toxin plus antidote acquired a high degree of immunity.

This procedure might be used in the preparation of antiscorpion serum from horses.

I wish to express my gratitude to Prof. G. V. Anrep for his interest, to Prof. Ali Hassan for his personal guidance, and to Dr. M. Talaat for help in the physiological experiments.

A CASE OF *P. FALCIPARUM* MALARIA

J. ELLIOT MURRAY, M D EDIN
CONSULTING PHYSICIAN TO AN EMS HOSPITAL

P. G. SHUTE, F R E S
ASSISTANT MALARIOLOGIST TO THE MINISTRY OF HEALTH

WAR and malaria are inseparable allies, and when there is a war in almost any part of the world where the isotherm is over 60° F. malaria is likely to be an important medical and entomological problem. During the last decade many important facts about the epidemiology of malaria have become known.

Plasmodium falciparum causes malignant tertian malaria, in which larger doses of quinine are usually necessary to cure an attack than with the other types of malarial infection. Although the primary attacks are usually very severe, relapses are less common than they are with at least two other species, and a relapse seldom, if ever, occurs after the ninth month from the time the infected person leaves an endemic area. *P. falciparum* malaria is a tropical and subtropical disease and it is not endemic where the summer isotherm is much below 70° F., while *P. vivax* (benign tertian) may be endemic with an isotherm of 60° F. It seems that so far in this war malaria has not affected British troops to the same extent as during the last war; but our overseas forces are for the most part in the *P. falciparum* belt and this parasite causes a higher mortality than either *P. vivax*, *P. ovale* or *P. malariæ*. It may therefore bring considerable anxiety to the medical authorities.

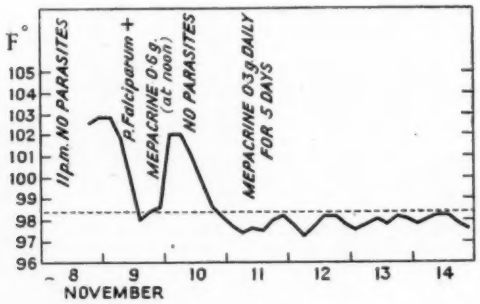
In primary infections due to *P. vivax*, over 85% of cases have quotidian fever with temperatures varying between 103° F. and 106° F. In untreated attacks the fever may continue for about a fortnight and then, even without antimalarial drugs, the tendency is towards a spontaneous recovery. In relapses, over 90% of the cases develop the classical tertian type of fever, and provided that the patient is confined to bed the fever usually disappears spontaneously after three or four attacks, probably depending on the number of attacks during the primary illness. But parasites often persist for weeks after the cessation of fever and unless such cases are treated they will develop severe anæmia. Even in acute primary cases of *P. falciparum* the temperature often fails to rise above 102° F. or 103° F. On the other hand with *P. vivax* infections a single attack seldom lasts for more than 10 hours and at the end of the attack the temperature falls rapidly to subnormal. In *P. falciparum* the temperature often remains above normal for several days, probably owing to successive segmentation of parasites at short intervals. Recently a case has come under our care.

CASE-HISTORY

An Army officer had been living in West Africa for 9 months. He fell sick while in Africa and was admitted to hospital. There was no previous history of malaria, but in August, 1941, he had been treated for bacillary dysentery; in September there was a gradual onset of pain in the right iliac fossa, aching in character and remittent. The pain increased, and on his admission to hospital there was some tenderness in the right iliac fossa but no fever or vomiting. He was constipated and there was a history of chronic indigestion. His blood was examined for malarial parasites several times but always with a negative result. He had begun taking quinine, gr. 10 daily, on his arrival in Africa and continued until a few days after his return to England. X rays showed nothing abnormal in the renal tract. An opaque meal showed a filling defect about the size of a walnut in the medial cæcal wall just above the ileocæcal valve, fixed and with acute local tenderness. The appendix was well filled, mobile and not tender. The findings were consistent with retrocæcal abscess or malignant disease. He was considered to be in need of urgent medical treatment so he was sent to England by air, and arrived on Oct. 26, 1941.

On admission to an English EMS hospital he looked rather sallow, his tongue was slightly furred, and his liver enlarged and tender; the spleen was not palpable. He had tenderness along the ascending colon, the point of maximum tenderness being just about the cæcal area; there was hyperæsthesia to pin-prick over this area. On the day after admission a barium enema was given. The barium passed through the colon freely to the ascending colon; this part of the colon was extremely irritable, filling and emptying periodically through-

out the examination; the cæcum was not outlined. The fæces showed no mucus or pus. Cultures produced a profuse growth of *Streptococcus fæcalis* and staphylococci; Morgan's bacillus was isolated. While at home on a week-end pass he collapsed and had a rigor followed by profuse perspiration,



pains in the limbs and severe pain in the right loin. He was brought back to hospital. His temperature on admission was 102° F.; pulse-rate 104 per min.

Thick and thin blood-films were examined for an hour but no malaria parasites were found. The question arose as to whether an antimalarial drug should be given in view of the clinical picture but it was decided to wait until the temperature fell and then examine further films. Next day films were again examined and after a 50 min. search of a thin film one parasite was found; 2 very small merozoites were suspected in a thick film. The parasite found in the thin film was very minute (an accole form). The films were stained with Leishman as described by James.[1]

The patient was given 0·6 g. of mepacrine by mouth and 48 hours later a dose of 0·3 g. daily for 5 days. On Nov. 20, 10 days after his attack of malaria, a barium meal was given and it was found that the cæcum filled normally. There was no evidence of growth or other abnormality. The enlargement of the liver disappeared and there was no tenderness over the cæcum or ascending colon. At a subsequent medical board, the officer was graded A1.

Up to date, ten months later, there have been no further attacks, either clinical or parasitological, and no further anti-malarial drugs have been administered.

COMMENT

A peripheral blood-film examination carried out at the height of an attack of *P. falciparum* malaria failed to reveal parasites. The illness is now believed to have been a straightforward uncomplicated case of *P. falciparum* malaria. We believe that it is unlikely that even a large dose of quinine, given orally, would have cured the attack as dramatically as did mepacrine (see figure).

It is not surprising that in Africa no malarial parasites were found, in view of the fact that, according to the patient, he was taking his daily dose of quinine all the time he was in hospital. If on admission to the African hospital, quinine had been discontinued an attack of fever would probably have developed, as happened when he ceased taking quinine on his return to England; parasites would soon have appeared in the peripheral blood and a diagnosis of malaria would have been made. As it was, the daily dose of quinine was keeping the parasites at such a low level as to make it almost impossible to find them.

1. James, S. P. *Trans. R. Soc. trop. Med. Hyg.* 1929, **23**, 269.

Reviews of Books

Non-Pulmonary Tuberculosis

MICHAEL C. WILKINSON, MB Lond, medical superintendent, Essex County Hospital, Black Notley. London: Hamish Hamilton Medical Books. Pp. 174. 12*s*. 6*d*.

THIS book is based on Dr. Wilkinson's experience in the investigation and treatment of 593 patients with all forms of non-pulmonary tuberculosis over a period of seven years. His views coincide with those of others that the prognosis of non-pulmonary tuberculosis is largely dependent upon associated lesions and their multiplicity; that the disease runs a long course and one that is, to a certain extent, self-limiting; and that constitutional and conservative treatment must be applied first, operation being postponed until the disease is quiescent. In his account of the pathogenesis the evidence in favour of a blood-stream infection is convincingly marshalled. The salient points in constitutional treatment—open-air, rest for both patient and part, good food and sunlight—are accorded a separate chapter. In considering the various forms of non-pulmonary tuberculosis individually he has used tables adroitly to show the incidence of associated lesions and the results of treatment.

It is a commentary upon our time that the section dealing with the signs and symptoms of tuberculosis of the spine begins and ends with the radiological features: thus the clinician's dependence upon the X-ray plate is as complete in the non-pulmonary as in the pulmonary manifestations of tuberculosis. Nevertheless, the general reader would welcome a brief reference to the more purely clinical symptoms and signs in order that he may help to prevent those late admissions to sanatoriums which Dr. Wilkinson mentions.

The Autonomic Nervous System

(2nd ed.) JAMES C. WHITE, MD. chief of neurosurgical services, Massachusetts General Hospital; REGINALD H. SMITHWICK, MD, assistant visiting surgeon to the hospital. London: Henry Kimpton. Pp. 469. 35*s*.

Dr. White has obtained the help of his colleague, Dr. Smithwick, in the task of rewriting his book, but those who knew and valued the first edition will be glad to find that the general pattern of the work is unaltered. Every chapter shows signs of careful revision and amplification. Surgical technique has been influenced both by the incomplete success of the earlier sympathectomies and by the results of physiological experiments; and the new operations, particularly for Raynaud's disease and for hyperpiesia, together with the evidence given in support of their efficacy, have special interest. The greater part of the book deals with the anatomy, physiology, and clinical investigation of the autonomic system and its disorders, and is of equal interest to physicians and surgeons. The chapters on visceral pain, and particularly that on angina pectoris, are to be commended, though renal pain and its relief by sympathectomy is given rather less attention than the subject deserves. There are more and better anatomical diagrams than in the first edition, but the illustrations of operations are still unworthy of a book pre-eminent in relating the autonomic nervous system to clinical medicine.

Companion to Manuals of Practical Anatomy

(5th ed.) E. B. JAMIESON, MD Edin. London: Humphrey Milford, Oxford University Press. Pp. 734. 15*s*.

THE fifth edition of this good and authoritative handbook can be used by students with manuals of practical anatomy, as intended originally, or to replace in some ways the regular use of textbooks. The section dealing with the central nervous system is still the most important part of the book, and the work is invaluable for occasional reference about detail, when it will spare the busy doctor a fatiguing search among larger works and textbooks.

The Blood in Cancer

O. CAMERON GRUNER, MD Lond. Montreal: Renouf Publishing Co.; London: H. K. Lewis. Pp. 100. 15*s*.

IN this book, morphological changes and variations in the constituents of the blood in cancer are described in great detail, and illustrated by figures and colour plates. It is not claimed that in cancer any specific or pathognomonic signs are to be found in the blood, but Dr. Gruner believes that a pattern of changes forms a guide to diagnosis. The alterations are recorded in pictorial form on charts from which the idea of a pattern is derived.

BIOCHEMICAL SOCIETY.—A meeting of this society will be held in the Department of Biochemistry, South Parks Road, Oxford, on Saturday, Sept. 26, at 11.30 A.M.

In Pruritus Ani,[1] Anal Fissure,[1] Pruritus Vulvæ,[1] and Lower Abdominal Pains originating from the Cervix Uteri[2]

Proctocaine is a lasting, non-toxic, local anæsthetic, for use in irritating or painful conditions of the skin and subcutaneous tissues. It is an improved form of A.B.A. Proctocaine is a combination of oil-soluble anæsthetics of low toxicity. These are combined so as to produce *immediate local anæsthesia* which is maintained by the slow, uniform absorption of its oily vehicle, and action of its oil-soluble ingredients.

The advantages of Proctocaine over other solutions have been found[1] to be as follows:

1. Its effect is almost certain.
2. It produces anæsthesia or hypo-anæsthesia for periods varying from 7 to 28 days or longer.
3. The relaxation which it produces in the anal musculature is much greater and more prolonged.
4. It is comparatively non-toxic, injection of 20 to 30 c.cm producing no general effect.
5. Even large quantities of it at one sitting have not been found to produce any local reaction if injected properly.
6. Its injection is painless if made slowly.
7. In no case did it produce severe after-pain.

[1] *British Medical Journal*, 1935, November 16th, p. 938.
[2] *British Medical Journal*, 1938, January 15th, p. 105.

In 2 c.cm. ampoules: boxes of 6, 4/6; and 12, 8/6.
„ 5 c.cm. „ „ „ 6, 8/6.
„ 10 c.cm. „ „ „ 3, 8/6.

Plus Purchase Tax.

PROCTOCAINE
Injection Solution
LOCAL ANÆSTHETIC—ANALGESIC

Telephone: 3201 Bishopsgate (12 lines) **ALLEN & HANBURYS Ltd., LONDON, E.2** Telegrams: "Greenburys Beth London"

A Mucilaginous Laxative with a natural mechanical action

I-SO-GEL
TRADE MARK
Granules

Indicated in
CHRONIC CONSTIPATION, COLITIS,
and allied gastro-intestinal disorders

I-so-gel is a natural vegetable material. The granules absorb many times their volume of water and swell into a firm, gelatinous mass which both stimulates natural intestinal movements and soothes inflamed intestinal mucous membrane. Indicated in chronic constipation, hæmorrhoids, colitis, dysentery, and allied gastro-intestinal disorders, and after colostomy.

Action purely mechanical.

Sugar-free. Ideal for diabetics.

In bottles at 3/- and 5/6 each.

Plus Purchase Tax.

ALLEN and HANBURYS LTD
LONDON · E2

Telegrams: Greenburys Beth London Telephone Bishopsgate 3201 (12 lines)

N 3 11

The fundamental nature of vitamin B

Since aneurin (vitamin B_1) is now known to be essential for normal carbohydrate oxidation in the tissues it is no longer surprising that so many apparently unrelated clinical conditions are found to improve when an addition is made to the often insufficient amount of vitamin B supplied in the diet. Similar considerations may also apply to the other constituents of the B complex.

The wide variety of possible B complex deficiencies, and of conditions to which these deficiencies may give rise, offers striking justification for the suggestion that therapeutic administration of any one factor may still overlook other responsible factors in any given case.

The difficulty is usually overcome by prescribing Bemax in which all the factors at present known are associated—and probably other important, though yet unrecognised, factors.

Bemax *the richest natural source of vitamin B*

Bemax contains approximately—

Vitamin B_1 .. 10–15 I.U. per gm. (400 I.U. per oz.)
Vitamin E (*a*-tocopherol) richest natural source (Approx. 8 mg. per oz.)
Vitamin A (carotene) 280 I.U. per oz.
Vitamin B_2 complex—
B_2 (riboflavin).. 0.9 mg. per oz.
P.P. factor (nicotinic acid) 1.1 mg. per oz.
B_6 (pyridoxin) .. 0.45 mg.

The chief indications for vitamin B therapy may be classified as follows:

Established or conditioned deficiency of vitamin B_1 (aneurin)

Beri beri.
Deficiency neuritis (alcoholic, diabetic, etc.)
Pregnancy, especially with polyneuritic symptoms.
Lactation.
Conditions with a raised metabolic rate, e.g. pyrexias, hyperthyroidism, cardiac decompensation.
Restricted diets especially those for gastric and duodenal ulcers, colitis and diabetes.
Rheumatoid arthritis (B.M.A. Committee's Rep. Section IX e).
Anorexia, especially in children. Gastro-intestinal atony.

Established or probable deficiency of other factors of the B complex (riboflavin, nicotinic acid, pyridoxin)

Roughening of the skin bordering nose and mouth, photophobia (riboflavin).
Pellagra and other conditions with porphyrinuria (nicotinic acid).
Low-grade skin infections, muscular dystrophies. (Pyridoxin—vitamin B_6)

Further particulars concerning Bemax sent to medical men on application to:
Vitamins Limited (Dept. L. J.), 23, Upper Mall, London, W.6.

★ **ASCABIOL** is available in:—
Bottles of 4 ozs. 4s. 0d.
less professional discount and plus Purchase Tax
★ Trade Mark

ASCABIOL BRAND BENZYL BENZOATE EMULSION

for the treatment of scabies presents a purified benzyl benzoate in the form of an elegant emulsion of high sarcopticidal potency.

OUR MEDICAL DEPARTMENT WILL BE GLAD TO SUPPLY YOU WITH FURTHER INFORMATION

PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD., DAGENHAM, ENGLAND

5021

THE LANCET

LONDON: SATURDAY, SEPTEMBER 26, 1942

STAPHYLOCOCCAL NURSERY

MEDICAL officers of maternity institutions, more particularly those emergency homes adapted for expectant mothers evacuated from the larger towns, have been impressed with the increasing frequency of staphylococcal infection among the babies. These infections may take a variety of forms—blepharitis, septic spots and paronychiæ, pemphigus, pneumonia and so on—and there is a strong tendency for each of them to breed true: for instance, pemphigus neonatorum and staphylococcal pneumonia seldom occur in the same outbreak in spite of the fact that the frequent involvement of the face in pemphigus would seem to favour an aerogenous pneumonia. Blepharitis or "sticky eyes" is the commonest form of staphylococcal infection among the newborn, and although it has often been noted as a precursor or accompaniment of pemphigus there is not necessarily any close connexion between the two infections. Most infants are unaffected by the blepharitis, which usually clears up quickly and is unassociated with skin infection. Septic spots and paronychiæ may affect several infants within a short period, suggesting a case-to-case spread, and according to CASS [1] the infections often coincide with the development of colds among the mothers. These superficial follicular pustules do not disturb the child's general health but must be distinguished from the dull red papular rash of generalised sepsis or the septic spot which is really a subcutaneous abscess.

Pemphigus neonatorum or bullous impetigo is characterised by the formation of dome-shaped bullæ with clear straw-coloured contents; the blebs rupture and desquamate readily, leaving red, moist, glistening patches which heal quickly. Sometimes desquamation occurs without vesicle formation and may be widespread, when the condition is called Ritter's disease or exfoliative dermatitis of infants. Many outbreaks of pemphigus neonatorum have been described, and there is now general agreement that *Staphylococcus aureus* is the causative organism. BENIANS and JONES,[2] who reviewed the essential features of the infection, failed to substantiate Almquist's claim that the pemphigus staphylococcus had distinguishing cultural characters, although FALLS [3] and others showed that it differs from other staphylococci in producing vesicular lesions when inoculated into man, and there is little doubt that nurses can be secondarily infected from infants. The primary source in any nursery outbreak is to be looked for particularly in skin lesions among mothers or nursing-staff. Routine swabbing of nose and throat is of little value, because over 90% of infants in nurseries are likely to be nasal carriers of *Staph. aureus* and the carrier-rate among nurses may vary from 20% to 50%. Nor is examination of the mother's milk likely to help, for more than half the milks from nursing mothers contain *Staph. aureus*.[4] Unfortunately serological typing of the staphylococcus is still a research, and the number of differentiated types is too small to allow conclusive deductions about sources to be drawn from this technique.[5] We must therefore try to discover the factors which predispose to outbreaks of pemphigus and devise methods for the control of an outbreak when it occurs.

The high incidence in emergency maternity homes may be associated with difficulties of adequate staffing and isolation accommodation. Cheap soaps are apt to be irritating and should be avoided for washing babies, more use being made of oils for rubbing into the skin. But the most important precaution is to keep a sharp lookout for any skin lesion on infant, mother or nurse, and treat it at once with 5% sulphathiazole ointment or "blue paint" (pigmentum tinctoreum *NWF*), preferably under bed-isolation conditions. When an outbreak occurs, the wisest course is to close the home to new cases until infected and exposed infants have all been discharged and the home has been thoroughly cleaned and disinfected, for the infecting staphylococcus may persist in the dust. Anything short of this, such as isolation of infected infants, wearing of masks and disinfection of baths or of the wards, may fail to check the spread of infection.[6] Fortunately the infection in most recent outbreaks has been mild and fatalities have been rare.

MORALE

SOME say that morale, like marriage, friendship and good neighbourliness, is an interhuman phenomenon which gets along all right as long as one does not talk about it. Our own morale has remained high for the last three years under grave adversities, but its hardest test may still be to come; we should therefore think of all possible ways of maintaining it, and there can be no harm in discussing it as a problem in social psychology. The term morale is vaguely used by political speakers and writers, and is variously defined even by psychologists. According to MCDOUGALL [7] "group spirit" depends on each individual member having a clear knowledge of the group and his place in it as well as a devotion to the group. This shows the double aspect of morale, one intellectual and one emotional; practical measures to maintain it will be influenced by which aspect is considered more important.

VERNON [8] has studied a number of human qualities generally regarded as linked with morale to find how far they are interrelated in the psychological make-up of the individual. He chose 17 qualities: intelligence, cheerfulness, stubbornness, considerateness, determination, openmindedness, adaptability, tolerance, idealism, acceptance of hardship without complaint, constructiveness, stolidity, trustfulness in leaders, optimism, stability, health and vitality, and self-confidence. He asked a group of psychologists and senior students to rate themselves and their acquaintances on these qualities according to a scale which gave three major degrees for each quality. Self-confidence, for example, was graded as: (*a*) outstandingly confident and well adjusted in all phases of life; (*c*) generally confident but some

1. Cass, J. M. *Arch. Dis. Childh.* 1940, **15**, 85.
2. Benians, T. H. C. and Jones, B. H. *Lancet*, 1929, **1**, 174.
3. Falls, F. H. *J. infect. Dis.* 1917, **20**, 86.
4. *Mon. Bull. emer. publ. Hlth Lab. Serv.* February, 1942, p. 9.
5. Cowan, S. T. *J. Path. Bact.* 1939, **48**, 169.
6. *Mon. Bull. emer. publ. Hlth Lab. Serv.* September, 1942, p. 2.
7. McDougall, W. The Group Mind, London, 1920.
8. Vernon, P. E. *Character and Pers.* 1941, **9**, 283.

anxieties or minor maladjustments; (*c*) anxious, worrying, timid in personal and social adjustments; (*b*) and (*d*) represented intermediate shades of difference. In this way 50 ratings of professional people, such as the raters themselves, schoolteachers or their relatives were collected. The same assessors were then given records of interviews with a group of 23 people unknown to them—mostly factory workers, small shopkeepers and the like—and asked to rate them on the same scale. The interviews had been carried out by trained interviewers in an endeavour to ascertain attitudes to the war. Since each of these records was assessed by two or three people the total number of ratings in this group was also 50. The findings in the two groups differed in some respects; thus the raters, who themselves belonged to the professional group, laid stress on the value of a rational, liberal, altrocentric outlook, which, though present in both groups, was more common among the professional subjects. Nevertheless they found an underlying common factor in both groups, made up of qualities which seem to hang together, the chief being confidence, optimism, trustfulness, resistance to hardship and cheerfulness. This general factor, it is interesting to note, was more easily recognisable among the interviewed group than among those with whom the assessors were well acquainted; as though in order to form snap judgments of people it is necessary to know them superficially rather than well.

The investigation had the disadvantage, of course, of being based largely on opinions, not on behaviour. In a later inquiry into war attitudes VERNON [9] sent out a questionnaire asking people not only for their views on current political issues, but about their war-work, savings, hardships, newspaper reading and other war activities. This was answered in April, 1941, by 230 subjects who, though not representative of the general population, showed a wide range of income, education and age. Their human background, sex, age, economic level and education were taken into account and correlated with their reactions to the war. Many of the results could have been anticipated, but the wide variations are striking and so is the strong evidence against over-simplified labels, like "reactionary," "complacent," "defeatist," which we are inclined to apply to other people. With regard to morale, knowledge and education appeared to act in the same direction as personal bombing experience: both make people more critical, and reduce irrational opinions, yet both may lead to greater war effort and good citizenship. This work is relevant to the theoretical views of JOSEPH GEOGHEGAN [10] who stresses the emotional aspect of morale to the exclusion of all others. "Morale is a feeling, not an intellectual opinion." Suggestibility, reduction of individuality, reversion to impulse and action of a more primitive type, childish pattern of behaviour—all well known clichés from LE BON'S *Psychology of the Masses*—are for him the mechanisms underlying morale. Factors increasing morale are therefore, in his view, a sense of unity, comradeship, and belief in positive ideals on our own side, coupled with negation of all good on the enemy's. Fatigue, under-nutrition, fear, inertia, monotony and inactivity exert a depressive influence on morale. He doubts whether the positive factors can be deliberately influenced, but thinks the problem deserves attention, especially in regard to "the shifting unstable masses of a civil population exposed to novel and dangerous stresses." This remark sounds rather out of touch with reality in view of the response of people in our bombed cities, but it would be a mistake to brush aside GEOGHEGAN'S views as a whole as out of date; and it would be a misleading over-simplification to call the morale he describes as the "German type," and to contrast it with the more critical and more intellectual British group spirit. The attitudes of the French, before their collapse, were probably as rational and critical as our own; the collapse itself followed an entirely emotional pattern. Nazi morale, which from outside seems to be built entirely on emotion, mass suggestion and herd instinct, has still to stand the test of adversity. But German internal propaganda does not rely on emotion alone: GOEBBELS likes to tell his countrymen that they are the best informed and most intelligent people in the world. British morale in this war is still predominantly rational and intellectual—widespread and fantastic rumours have been rare, and blind fervour, emotional propaganda, and any stirring up of hatred have been widely criticised. If those who support the war in the hope that it will lead eventually to a more rational and democratic organisation of society are still a minority, they are as VERNON points out more numerous and more vocal than in any past wars. It should make the task of those who have to care for our morale easier if they can work on intellect and reason instead of playing on emotions. How to do it without upsetting the emotional side of morale, which is probably more vulnerable because less vocal in this war, would be worth studying.

9. *Brit. J. med. Psychol.* 1942, **19**, 271. 10. *Nature, Lond.* 1942, **150**, 9.

THE SPECIALIST IN THE FORCES

THE practice of medicine in the Forces has been criticised repeatedly and defended as often, but few writers have dealt with specialist work. A large number of specialists in the Forces are young men at the beginning of their careers, and although a few are idle most are doing some work. Unless they are very unreceptive these young specialists are learning important and invaluable lessons, the physicians not much less than the surgeons. There is no way of shirking decisions in the Forces as there is in civil life; this may not be the general impression, but it is so. When a man is sent to a specialist there is no dodging the problem; the specialist must make up his mind clearly and definitely about diagnosis, treatment and disposal, and his advice must bear a realistic relationship to circumstances. He cannot always be right, but he is learning to make decisions on clinical grounds—almost a lost art—and with increasing experience and confidence the number of errors falls. Gone are the happy days of vague phrases and liquid placebos. The bureaucratic mind demands a label, a recognised standard name for every lesion, and it is thus unconsciously forcing the younger generation to think clearly and precisely about its clinical problems, forcing it to give up woolly thinking or writing pompous reports designed to hide a complete absence of ideas. In military hospitals, too, the highly trained nursing staff of civilian hospitals is largely replaced by unskilled personnel. Young specialists working in well-staffed highly

systematised hospitals take for granted a large amount of hospital work and organisation without knowing how it is done. The physician orders various nursing treatments without knowing in detail how to do them himself; or the surgeon walks into the theatre, dons his sterile gloves and proceeds to operate without any idea of how to sterilise those gloves or how to prepare that theatre. In the Forces they are brought face to face with these fundamental problems. No longer does the surgeon waste his time on academic discussions of the hundred-odd operations for recurrent dislocation of the shoulder-joint; he is too busy learning how to work the autoclave or cut swabs or rub plaster, in order to train his orderlies correctly. This training is ample recompense for the slowing down of clinical and technical development. But perhaps the most useful feature of medical practice in the Forces is the opportunity it gives for acquiring an improved knowledge of prognosis. Under the civilian system the hospital staff rid themselves of the patient as soon as they can, and learn at second hand if at all how long he takes to recover fully, while the practitioner is often left to cope under unsuitable conditions with a patient who really needs longer hospital treatment and supervision. This situation does not arise in the Forces, because it is useless sending an unfit man back to his unit. He is a burden to himself and everyone else, and must be retained by the medical services until he is fit. This has brought some nasty surprises, but the ultimate effect on the specialist will be excellent, for he is developing a better knowledge of the natural history of diseases, a more cautious view of the speeds of recovery, and a clearer understanding of the large gap that exists between "fit for discharge" and "fit for work."

SUPERLATIVE ASEPSIS

THERE are as many variations in sterile surgical techniques as in the allied field of religious ritual; and in both there is an ideal of ultimate purity, seldom attainable but serving as a goal towards which disciples may strive. Professor GUDIN [1] of Rio de Janeiro seems to have approached the goal in his operating technique and when new theatres are being planned his ideas deserve consideration. He recognises three phases in surgery: the first, lasting centuries, characterised by ignorance of micro-organisms; the second, which began with LISTER, notable for partial control of bacterial action and the appearance of healing by first intention; and the third, which we are now approaching, the phase of total sterilisation, in which a new type of healing will be the rule—something that might be called Pasteurian cicatrisation. Healing by first intention, as seen in an operation wound, he points out, is healing of a wound contaminated by the air of the theatre; there is an inflammatory reaction in which the healing response of the body quickly gets the upper hand. That the air in the theatre carries infection under ordinary conditions can easily be demonstrated—gloves and instruments sterilised, covered with agar and exposed in the theatre quickly grow colonies of organisms, some of them pathogenic. The air, as GUDIN shows, can only be sterilised if the walls and equipment are sterilised at the same time. He does not despise air-conditioning plants and ultraviolet lamps as accessory aids, but he regards them as inadequate when used alone because they act solely on the air. He has devised a "total steriliser," which, placed in the hermetically closed operating-theatre and controlled electrically from an adjoining room, sterilises the whole theatre and its contents. The apparatus first liberates formaldehyde in an atmosphere saturated with moisture, and after this has done its work ammonia is released. To remove the hexamine thus formed the air is pumped through a solution of tartaric acid, and the air-conditioning apparatus is put in operation. The hexamine is soluble in water and any excess of ammonia combines with the tartaric acid. That the air, walls and equipment of the theatre are thus rendered aseptic is shown by exposing agar plates after the total steriliser has been at work; they remain sterile.

Only the surgeon and his team and the patient are allowed into this sterilised theatre. Students watch operations through a glass panel let into the ceiling, and the ceiling is specially low to give them a good view. The operating team reach the theatre through four previously sterilised anterooms—two for the preparation of the patient and two for the surgeons' preliminaries. Surgeons and patient discard all clothing before entering the sterile rooms and are dressed in sterile overalls made to cover the entire body like diving suits. The surgeons' hands are prepared by scrubbing with a succession of sterile brushes for 10 minutes. The patient's skin at the operation site is cleansed with benzene and then treated for at least 10 minutes with a freshly prepared 10% iodine tincture. The anæsthetised patient is wheeled into the theatre on a mobile operating-table, to which instrument trays and discard bags are attached so that the whole unit can be removed to make room for the next patient. The surgeons wear goggles as well as masks and gloves and do not speak while in the theatre; no-one with an upper respiratory infection is allowed in. Sweating is prevented by careful air-conditioning.

GUDIN'S precautions are aimed at excluding the three main sources of wound contamination in the theatre—the air, the hands of the surgeon and his assistants, and the patient's own skin. His sterilisation of the air seems bacteriologically irreproachable, but the method of using ultraviolet light as practised by DERYL HART [2] is simpler though not so comprehensive. Much of this air-sterilisation should, however, be unnecessary if one could be certain of preventing contamination from the respiratory tracts of the theatre occupants and from the hair, clothing and skin of the operating team. Efficient masking is a sine qua non, and changing of clothing and shoes should be an invariable rule. Spectators must be screened off by glass, though the student will lose a lot by not hearing the surgeon's comments; there is much to be said for a running commentary by someone other than the surgeon. In one Canadian unit the surgeon wears a small sterilised microphone attached to his gown, through which he can broadcast to students or dictate to his secretary. Goggles, as worn by GUDIN, shield the eyebrows, which commonly contain staphylococci. And it is well to remind the junior nursing staff of the theatre to have their

1. Gudin, M. *Ann. Surg.* 1942, **115**, 452.

2. Hart, D. *Surgery*, 1937, **1**, 770.

hair completely covered; the patient, too, especially when the operation is being done under local anæsthesia, often lies unmasked and uncapped. The practice of bringing the patient into the theatre covered with blankets from the ward, teeming with streptococci, could be stopped now, without waiting for the days of super-sterility. With simple care these sources of infection can readily be excluded, and RICE, WEED and RAIDT,[3] having made a thorough bacteriological study of the subject, conclude that "the bacterial content of the air in the operating-room may occasionally be a source of infection, but its importance has been grossly overemphasised." One of the most potent sources of wound infection is the surgeon's or assistant's hands via the pricked glove. DEVENISH and MILES [4] have shown that some 15% of unpatched and 24% of patched gloves are found to be punctured after the operation, and they actually traced an epidemic arising from a surgeon's hands carrying *Staphylococcus aureus*. HIRSHFELD [5] recalls that HARVEY CUSHING, who had an extremely low sepsis incidence in spite of his hands being exposed to unsterilised air during long operations, always wore heavy gloves. The non-touch technique is an added but still not complete protection against these accidental punctures. Unfortunately a multitude of brushes and repeated scrubbing for 10 minutes will not ensure complete sterility of the hands. According to PRICE [6] there are two types of organisms on the skin—the transients and the residents. Washing will get rid of the transients but the residents are more securely dug in. As COLEBROOK [7] has shown, 5 minutes washing is usually ample, and more, especially in busy times, will severely damage the surgeon's skin. He has also demonstrated that it is better to wash in a little water, say 3–4 pints, with plenty of soap, than under the running tap, for most of the pathogens commonly met with in surgical sepsis are readily killed by soap. Cleaning the patient's skin as recommended by GUDIN is sound, but the fair-haired Englishman's skin will not tolerate 10% iodine. COLEBROOK has in fact shown that 2% iodine in tincture or watery solution for 3 minutes is sufficient, and liquor chloroxylenolis (or antisepticus) of the NWF is just as efficient. But all this care—the surgical fiddle-faddle, as CLIFFORD ALLBUTT called it—will come to nought if sterile technique is discarded at the subsequent wound dressings, and there are still too many surgeons who have not digested, even if they have read, the MRC memo on hospital wound-infection.[8]

If any surgeon thinks his results are not capable of improvement in relation to infection, he will probably be disillusioned if he keeps records of post-operative wound reactions as well as of more serious infections. The enthusiast for chemotherapy will remark that preoperative and postoperative sulphonamides will shield his patient from all hazards; but the happy day has not yet come when we may feel so sure of our power to immobilise invading bacteria that we can cheerfully let them in. Chemotherapy must still be a reserve line of defence.

3. Rice, T. B., Weed, L. A. and Raidt, H. *Surg. Gynec. Obstet.* 1941, **73**, 181.
4. Devenish, E. A. and Miles, A. A. *Lancet*, 1939, **i**, 1088.
5. Hirshfeld, J. W. *Surg. Gynec. Obstet*, 1941, **73**, 72.
6. Price, P. B. *J. infect. Dis.* 1938, **63**, 301.
7. Colebrook, L. *Bull. War Med.* 1941, **2**, 73.
8. Prevention of "Hospital Infection" of Wounds. MRC War Memo. No. 6. HMSO. 6d.

Annotations

MORE PÆDIATRIC PLANNING

SINCE the last reference to this subject in these columns [1] the word "pædiatrics" has been admitted to the columns of the *Times* [2] without a protest from Mr. A. P. Herbert, and Prof. L. G. Parsons has submitted a memorandum to the board of management of the Children's Hospital, Birmingham, on the improvement of teaching in pædiatrics in the University and for the provision of a pædiatric service for Birmingham and district. To these notable events may be added the establishment of a chair of child health in the University of Durham to be filled by Dr. J. C. Spence. Industrial Newcastle thus follows the precedent of industrial Leeds where Dr. C. W. Vining holds the chair of children's diseases. Prof. Parsons starts off with the important observation that pædiatrics is not a specialist subject but one which concerns the general study of children in health and disease and is not limited by one aspect of disease or by disease of one organ. Prof. G. B. Fleming has made the same point clear.[3] For this reason, children's hospitals are not special hospitals; indeed they are more "general" hospitals for children than the so-called general hospitals, some of which exclude diseases like pulmonary tuberculosis. Thus any scheme which plans reorganisation of the hospital services along the lines of taking the special hospitals more directly into the orbit of the general hospitals must not assume that the children's hospital can be classed with (say) ophthalmic or gynæcological hospitals. Pædiatric planning indeed starts with the children's hospital as the centre of activities for the care of the child in health as well as sickness.

London is planning on these lines also, according to a letter [4] from Lord Southwood, chairman of the Hospital for Sick Children, in which he indicates that he is also chairman of a "committee for the coördination of the medical services for the children of London" which appears to have started with the hospital services as the essential feature of the future of pædiatrics. Both in Professor Parsons's memo and in the *Times* article it is clearly shown how this may be brought about. The pædiatric surgeon (and indeed the pædiatric physician) takes little or no part in public preventive or social medicine, while medical officers in the child welfare and school medical services are often overburdened with administrative duties to the detriment of their clinical work. Both groups have their contribution to make to the study of the child in health and disease and yet they are apt to be suspicious of one another. In Birmingham it is suggested that the Children's Hospital should be closely linked with the pædiatric services of the city and region. The whole of these services would then be available for teaching purposes and their medical officers would receive postgraduate instruction at the hospital and be eligible there for posts as clinical assistants. Contrariwise members of the hospital staff would be available for work at welfare centres. Professor Parsons would also like to see an infant welfare centre developed at the hospital, a home for cardiac cripples, a "preventorium" for children with the primary tuberculosis complex, an extended almoner's department to form a real social service department, as well as education facilities and a development of occupational therapy. An interesting suggestion is for a "humanity" department where telephone and personal inquiries can be answered in kind and simple language. Many other suggestions appear in the Birmingham scheme which have a wide application.

Following the primary need of a comprehensive service, and complementary to it is the question of the

1. *Lancet*, Aug. 15, p. 190.
2. *Times*, Sept. 12, p. 5.
3. *Lancet*, 1942, **i**, 631.
4. *Times*, Sept. 17, p. 5.

education of the medical student. The modern student, the *Times* hopefully remarks, is interested in children; but with only the possibility of a question in his final examination, and so much else to make sure of, he takes the chance of getting qualified without any real knowledge of the child in health or sickness. In Canada and America pædiatrics has its place in the finals alongside medicine, surgery and midwifery. To teach pædiatrics—not merely diseases of children—in its full curative and preventive aspects implies the coöperation of children's hospitals and public health work, and efficient training of the whole personnel, from hospital nurses, health visitors and school nurses, right down the scale to the family nanny, if such a worthy person is still to be found in the post-war world. Indeed training of workers in the pædiatric field should be the first task of any new national service for children's health. Prof. Chas. McNeil writing more particularly of the newborn baby has stated bluntly [5] that in this respect the state of preventive pædiatrics in this country is second-rate; but he is convinced, as was quoted in these columns recently, that this can be put right by teaching and training. At the moment organised medicine is in danger of dropping behind public opinion in this matter. Of course pædiatrics is a major subject. Its future developments have a national importance. The blue prints for Birmingham, London or Durham must be on view for all to see.

THE THOMAS SPLINT

Hugh Owen Thomas would still have been a major contributor to orthopædic surgery if he had done no more than design the knee-splint which bears his name. Diggle, on another page, reminds us, if reminder were necessary, of the efficiency with which fractures of the femur can be treated in it, using skin-traction by strapping. As he points out, the main criterion of success in estimating the results of treatment is not the amount of shortening—provided this does not exceed three-quarters of an inch, within which it is easily compensated for—but the final range of movement in the knee. If the knee cannot be bent to a right angle a year after the fracture the treatment must be regarded as having failed, for this range should have been regained within the first 9 months. At the end of the period of traction the patient treated with a transfixion pin and the knee flexed may have an impressive range of motion, while at the same stage after skin-traction on a Thomas splint the knee may be almost completely stiff; yet it is a common experience for recovery in the latter case to outstrip the former rapidly and to reach full, or nearly full, movement while the other may never do so. Because the efficient use of the Thomas calls for painstaking and continuous attention to the numerous details of slinging, support and extension, there has been in recent years an increase in the popularity of the Braun frame used with skeletal traction as a simple and less laborious mode of treatment in which the patient can be left to his own devices after the primary reduction. Excellent results can thus be achieved, but, apart from the avoidable dangers of over-extension and infection of the pin-track, the frame is not a splint and there is relatively little control of the upper fragment, especially when the fracture is in the upper shaft. Armstrong [6] has pointed out its inefficiency in dealing with fractures of the upper third, advocating a return to the Thomas for this injury. Diggle's article is timely as a vindication of old-established method now when fractures of the femur have to be treated in places where the Thomas splint and the simple apparatus that goes with it is the only means available. It is important, therefore, that the supply of splints to each centre should embrace an adequate range of sizes with gradual increases of 2 inches between the extremes, and that splints should be the right length. Otherwise it may be impossible to fit the splint to the patient's thigh, to add a windlass for fixed traction and to transport patients comfortably; and hospital splint rooms may be cluttered up with a host of useless, because ill-designed and hurriedly made, splints—a situation familiar in the early days of the present war.

5. *Brit. med. J.* 1942, 1, 429.
6. Armstrong, J. R. *Lancet*, 1940, 1, 957.

LOSS OF LIFE IN TWO WARS

Greenwood [1] has shown that loss of life in the British armed forces in the wars of 1794–1815 and 1914–18, in relation to the male population, was about the same. If account is taken of civilian losses of life directly or indirectly due to the war, which were important in 1914–18 and negligible in 1794–1815, the number of deaths was relatively greater in 1914–18. Greenwood's comparison of the deaths in the two wars is summarised in the following table compiled by Isserlis. In the last column the totals for 1914–18 are divided by 2·5, the ratio of the male populations of the United Kingdom in 1911 to that in 1811.

1794–1815		1914–18 As recorded		1914–18 After division by 2·5
Navy—		Navy and Merchant Marine	48,000	
By enemy action	6,663	Land Forces ..	724,000	
By marine risk, less "peace" totals ..	11,905		772,000	
By disease, &c., less "peace" totals ..	44,662	Deduct "peace" totals ..	65,000	
	63,230		707,000	
Army (similarly calculated)..	143,808	Deduct 22% for Dominions ..	156,000	
	207,038		551,000	220,000
Civilians—		Sea passengers and civilians killed in raids ..	8,389	
By enemy action, i.e., in privateers ..	?	Underestimated, say	4,111	5,000
By excess of civilian mortality ..	Nil		12,500	225,000
		Excess civilian mortality, not including influenza ..	187,500	75,000
Say ..	210,000	Say ..		300,000
Loss of births..	Nil	Loss of births, say 500,000 to 700,000		240,000
	210,000			540,000

Detailed and reliable figures are not available for the period 1794–1815. Official publications relating to the Navy were confined to numbers of men voted, and returns of killed and wounded. The War Office compiled more statistics but they were defective and incomplete. The figures shown in the table for 1794–1815 are chiefly the estimates of W. B. Hodge.[2] The comparatively small number of deaths caused by direct enemy action and the large number due to disease and accidents of war is remarkable. Hodge made the ratio of non-battle to battle casualties 8 to 1. In 1914–18 (land forces) it was 1 to 5·3. Hodge's method of obtaining the number of additional deaths in the Navy arising from disease and ordinary accidents caused by the war (the figure 44,662 in the table) is interesting. He estimated the average number of men serving annually in ships at sea as 110,180. He then calculated that these men were subject to an additional risk of death through disease or accident, owing to the war, at the rate of 16 per 1000. This in 20·45 years of war gave 36,051 as the number of additional deaths caused by disease or accident as a result of the war. But allowance had also to be made for the fact that some 70,000 of the 110,180 men serving were civilians who were subject to an increased risk of

1. Greenwood, M. *J. R. statist. Soc.* 1942, **105**, p. 1.
2. *Ibid*, 1855, **18**, 201; 1856, **19**, 219.

death while serving as sailors, quite apart from the war. Hodge adds the difference between the expected deaths as civilians and the expected naval deaths to his 36,051, giving a total of 44,662. Greenwood's net figure of casualties in the armed forces in the 1914–18 war is obtained in a similar way, by deducting from the total number of deaths the estimated number of civilian deaths. He emphasises that his comparison is made from a purely arithmetical point of view. "Economically and psychologically a bill which must be paid within four years is more onerous than one which is discharged by twenty annual payments." Apart from the different length of the two wars, there were two heavy costs in terms of human life in the 1914–18 war which did not apply in that of 1794–1815. Losses of life due to direct enemy action against the civilian population or disease consequent on a lower standard of living were negligible in the war of 1794–1815. There is good evidence that the general health of the people improved during the war, partly due to a higher level of real wages. The case was far different in 1914–18, when 6330 sea passengers were drowned and 2059 civilians were killed in air-raids or coastal bombardment. In addition the death-rate increased. Vedel-Petersen[3] estimated excess civilian mortality in England and Wales during 1914–18 at 281,000. Of these more than 130,000 belonged to the pandemic of influenza. Opinion differs on what proportion of these excess deaths, particularly those caused by influenza, was due to the war. A further factor in 1914–18 was the loss of births. Sir Bernard Mallet estimated the shortage at 500,000–700,000. In 1794–1815 there is no reason to suppose that the war affected the birth-rate at all, since the overseas armies were small. It is interesting to contrast civilian and service death-rates in the two wars. In 1794–1815 the annual deaths among serving men, additional to an estimated civilian rate of 10 per 1000, were at the rate of 32·8 per 1000. In 1914–18 the civilian rate was 4·8 per 1000 per annum and the annual deaths additional to this in the armed forces were at the rate of 52·3 per 1000.

POSITIVE CONVALESCENCE

TODAY we must all help to make the wheels go round and we cannot afford to carry passengers, so economy supports humanity in the demand that everyone who falls ill or is injured should be completely restored as quick as possible. The EMS rehabilitation centres, where groups of patients with similar lesions are collected and treated together, give good results and are sparing of equipment and trained personnel. But at the congress of the Chartered Society of Massage and Medical Gymnastics on Sept. 18 both Prof. John Ryle, who gave the opening address, and Prof. F. R. Fraser warned these trusted handmaidens of medicine against the dangers of overspecialisation. Ryle told the masseuses that they were the mediators between disease and health; whatever happened we should need them badly. For the future, he thought, they would need a better appreciation of the purpose of their work, closer coöperation with other branches of the medical and health services, and a broader training in their craft. They must learn to see the patient not only in terms of his injury but as an individual against the background of the community. Both Ryle and Fraser were sure that simple improvised apparatus could give better results than expensive and stereotyped routine (it was Opie who, when asked with what he mixed his paints, replied: "with brains, Sir.") and Fraser, while giving the mass methods of war-time their due, cast a nostalgic glance back to the old days when each patient was a problem whose rehabilitation must be provided within the limits imposed by his habits and environment. Today the work of the masseuse, the physical training instructor and the occupational therapist tend to be limited each to its own sphere. But tomorrow we may well want a paragon who will combine the skill of all three with the insight of the psychologist and the zeal of the social worker, for in Ryle's words, we shall not only be mending broken men but a broken world. Ministers of the Crown are vying with each other in their adulation of toughness, fitness and physical development, but as Lord Horder, president of the society stressed, it would be up to us to keep the ministers to these ideals when the hurly-burly is over.

3. Losses of Life Caused by War. By Samuel Dumas and K. O. Vedel-Petersen. Oxford, 1923.

MEDICAL JUDGE

His Honour DIGBY COTES-PREEDY, KC, was a truant from medicine. After being house-physician at St. George's and editor of the hospital journal, he read for the bar and was called by the Inner Temple in 1904. But he could not and would not forgo his medical background, and whether as advocate in the divorce court or as judge on circuit he had the informed and sympathetic outlook of the biologist on the events of human life. He made a special study of the law relating to hospital authorities and was a lively member of the departmental committee on coroners. "Competent and popular" certainly, in the words of the *Times*, and more than that, for he had the double gift of interpreting medicine to the legal mind and almost of justifying the law to the medical mind. He will be missed both by bar and bench.

UNSIGNED COMMENT

ON another page Professor Fisher writes with feeling about the abuses of anonymity, taking as his text an unsigned review in our own columns and comparing it with a signed review of the same book in another weekly journal. From his quotations it appears that the unsigned review was the more critical of the two and he thinks that readers of THE LANCET would have been better served by being told the identity of the reviewer, so that they could judge for themselves the value of his opinion. Professor Fisher suggests that the reviewer who comes out into the open is less likely to say things which he cannot substantiate—putting it more baldly, to talk through his hat. If that impression were true Professor Fisher would have proved his case, and it would follow that all expressions of critical judgment, whether in reviews, leading articles or annotations, should be attributed to their multiple sources, which would be impracticable if not absurd. But is it true? Dr. A writes a monograph on a new subject or develops a theory to explain some old observations and Dr. B gives his opinion on it in a signed review. It will be plain sailing, though no mean task, to set out briefly the gist or message of A's work, and praise or minor criticism will present no difficulty. But if he has reason for major criticism B may give offence or involve himself in interminable argument by writing frankly, so he may well say less than he thinks. Dr. C, on the other hand, when he drafts an unsigned review, will tell the editor all that is in his heart and look to him to put it in proper form. The editor will then exercise his function as a clearing-house of informed opinion by bringing C's comment into line with other views. There is little scope here for the exploitation of anonymity and a rather long experience suggests that author and reader are gainers although the reviewer may sometimes suffer.

Mr. SHEFFIELD A. NEAVE, DSc, CMG, is to fill Dr. Julian Huxley's place at the Zoological Society of London until the spring annual meeting. He is believed to know most of the 225,000 genera, large and small, of the animal kingdom, but quite certainly has an intensive knowledge of the insects harmful to human progress, especially the tsetse fly. As travelling pathologist and naturalist he follows in the footsteps of his father, whose name he bears, a naturalist who took up medicine late in life and had the naturalist's eye for small variations from the normal.

Special Articles

HONG-KONG ON THE EVE

P. B. WILKINSON, M B LOND, M R C P
LATE MEDICAL OFFICER IN THE COLONIAL SERVICE AT HONG-KONG

HONG-KONG proper is a small island 36 sq. miles in area lying off the south coast of Kwantung province. The whole colony embraced many other islands and a small area of the mainland which stretches inwards from the Kowloon peninsula for about 20 miles. The island is just within the northern tropic and has a subtropical climate: that is to say, from May to October when the south-west monsoon is blowing, the maximum day temperature averages 87° F. and the relative humidity is also high; from November to May, the so-called winter period when the north-east monsoon is blowing, the maximum day temperature averages 66° F. and the weather is agreeable. The annual rainfall is about 70 in. and most of this falls during the hot season.

When the English took Hong-Kong from China in 1841 after the victorious conclusion of the Opium War, the island was a barren, inhospitable and uninhabited rock. Although it was occasionally visited by pirates it was for the most part avoided by the Chinese of the adjacent mainland because malaria was rife. A hundred years of English occupation have done a little to improve the island, which is now habitable. It is still comparatively treeless and flowerless, and vigorous attempts at afforestation have only succeeded in making it look like the dream of a third-rate horticulturist with a passion for conifers. A gigantic city, Victoria, has sprung up on the landward or northern coast of the island and it is confronted by a slightly smaller city, Kowloon, on the mainland. It may be said with truth of the English, that they carry two things all over the world—their beer and their architectural vulgarity. Both abound in these two cities, but Victoria takes precedence over Kowloon for the vast extent and unparalleled squalor of its slums.

These two cities have grown up because Hong-Kong, by virtue of its position at the mouth of the Pearl River, offers easy access to Canton, the capital of South China. The enormous entrepôt traffic which developed during the last century made Hong-Kong one of the biggest and wealthiest ports in the world. Its population in 1937 was approximately 800,000. By the end of 1942 that figure had risen to 1,750,000, because of the unceasing influx of refugees and other victims of Japan's war of aggression on China. Before the outbreak of the Sino-Japanese war in 1937 it was estimated that 10,000 ships cleared the port every year. When one remembers that in addition to this immense sea-borne traffic there was a daily inflow and outflow of 8000–12,000 from the mainland to the island and back, it is easy to realise how vulnerable the island was to those epidemic diseases which prevail in the Far East. During the last few years the development of air-lines increased this danger, and the story of medicine in Hong-Kong during the last few years was early the story of the efforts made to combat the threats to the island from air-borne, sea-borne and land-borne diseases.

Air-lines running to and from the colony were few, and the passengers were examined on arrival. The one great danger which faced health officers responsible for the control of air-borne passengers was yellow fever, but stringent precautions were taken by all countries interested which successfully prevented the importation of this disease. Sea-borne traffic, when one is dealing with ocean-going ships alone, was comparatively easy to cope with since the introduction of radio-pratique in 1938, though I have seen cases both of cholera and typhus which arrived in Hong-Kong by sea. But the innumerable junks and sampans which plied between the island and the mainland, and the coastal ports, presented an insoluble problem.

The risks from land-borne traffic were perhaps gravest of all. Hong-Kong has been a free port since the English took it in 1841; this means that no restriction of any sort was imposed on immigrants from the mainland of China. This state of affairs adds intolerably to the burden of health officers, and unsuccessful attempts were made to exercise some control over mass immigration. For political reasons it was obviously not expedient to introduce any drastic restrictive measures during the last four years against people who were soon to be our allies, and those measures which were introduced were speedily nullified by the intelligence and ingenuity of the Chinese. For example, it was suggested that a poll-tax of ten Hong-Kong dollars be imposed on each immigrant; our twenty-mile land frontier was instantly manned by smiling money-lenders brandishing the necessary notes and recovering them at a handsome profit when the frontier formalities had been complied with. During the four years 1937–41 immigrants and refugees poured into the colony in an unceasing stream and the daily tidal population also increased considerably. These factors, coupled with a steady fall in the standard of living and housing conditions, greatly increased the incidence of epidemic disease and deficiency diseases in the colony, and the mortality from beriberi and pellagra, for instance, rose to unprecedented heights during the last two years.

THE PRODUCTION OF ANTIBODIES

OUR knowledge of the processes by which antibodies are formed is very incomplete. It is not even known for certain what cells in the body are responsible for the production of antibodies. Current theories fail to explain certain characteristics of antibody production. Antibody activity is generally accepted as a function of modified serum globulin molecules, and the essential problems are to determine how normal serum globulin is produced and how antigens introduced into the body can influence the cells concerned so that specifically modified globulin is formed. An alternative hypothesis of antibody production has been suggested by Burnet and his colleagues at the Walter and Eliza Hall Institute, Melbourne.[1] Recent work supports their conclusion that antibodies correspond physically to the globulins normally present in the same animal species and the type of globulin utilised varies with the animal species and the type of antigen concerned. For example, specific pneumococcal antibody in the rabbit and man is associated with globulin molecules of normal size, while this antibody in the horse is associated with heavy globulin molecules such as are present in only small amounts in normal horse serum; diphtheria antitoxin prepared in the horse, however, is found in pseudoglobulin molecules not different in molecular weight from normal. The Melbourne workers suggest that the plasma proteins probably serve as a mobile store of protein, and the disappearance of antibody from the blood of an immunised animal may be due to its destruction and utilisation for protein reconstruction. Of the globulin increase during immunisation not more than 30% is accounted for by antibody and it seems likely that a considerable proportion of normal serum globulin is prepared by the cells responsible for antibody production.

Certain deductions about the mode of formation of antibody can be made by considering the rise and fall of antibody in the blood after first and subsequent injections of antigen into animals. In illustrative experiments with different kinds of antigen done in Melbourne the difference between the primary and secondary antibody response was greater after injections of toxoid than after injections of bacteria or bacteriophage, while the secondary response was not demonstrable in the type of experiment carried out with the rickettsia of Q fever or herpes virus. With most of the antigens, however, a logarithmic increase in antibody could be shown to occur under suitable conditions over a short period. This logarithmic increase can be accounted for by the hypothesis that there results, from second injections of antigen, proliferation of the antibody-producing mechanism so that over a short period a progressively increasing number of units come into play; these may be cells or subcellular units. The later phase of the antibody response varies with different antigens. When certain antibodies are transferred passively to an animal the rate of fall is rapid and logarithmic but this does not occur after active immunisation when the fall becomes slower with time. This is probably due to continued production of antibody at a diminishing rate and a steady removal of antibody at a rate proportional to its concentration. It is suggested that the different types of antibody

1. The Production of Antibodies: A Review and a Theoretical Discussion. F. M. Burnet, MD Melb, FRS. With the collaboration of Mavis Freeman, BSc Melb, A. V. Jackson, MB Melb, and Dora Lush, MSc Melb. Melbourne: Macmillan. Pp. 76. 8s. 6d.

response evoked by different antigens in the same animal species may be related to differences in the groups of cells concerned with the antibody formation.

Although direct proof is difficult to obtain it has generally been accepted that the reticulo-endothelial cells in the liver, spleen and bone-marrow are mainly concerned with antibody formation following intravenous injection of antigen. The evidence on this point has not been reviewed by Burnet but he discusses the part played by the germinal centres of the lymph-glands and spleen and gives details of hitherto unpublished experiments. After injection of virus, phage or bacteria antibody was demonstrated in the lymph-nodes draining the site of injection before, or in greater amount than, in the blood. The experiments with staphylococcus toxoid were not so conclusive, perhaps owing to the diffusibility of this antigen. Experiments on local production of antibody at the injection site were negative but the findings of others have been positive. The general conclusion drawn is that antibody is produced by those phagocytic cells of the reticulo-endothelial system which ingest the antigen. Which group is actually concerned is determined by the site of infection or inoculation and subsequent spread of antigen in the body. The available evidence indicates that antigens are destroyed soon after being taken up by the reticulo-endothelial system but antibody production goes on. Although attacks of measles and yellow fever are followed by life-long immunity there is no evidence that immune persons are virus carriers in these two diseases; the long-lasting immunity must be accepted as something induced by the infection but maintained by the body after all the virus has been destroyed. Burnet suggests that the antibody concerned with allergic states is produced by tissue histiocytes near the site of infection or inoculation and differs in several respects from that produced by the reticulo-endothelial cells of the major antibody-producing organs.

Any acceptable hypothesis on the mode of formation of antibodies must take account of the immunological facts outlined above. The Haurowitz-Mudd theory of antibody synthesis in direct spatial contact with the antigen is inadmissible, if the evidence is accepted that antibody production can continue after destruction of the antigen. The central feature of the hypothesis put forward by Burnet is the use of Bergmann and Niemann's conception of the dual proteolytic and protein synthetic activity of intracellular proteinases, but it goes further. Whereas, according to Bergmann and Niemann, protein is synthesised by intracellular enzymes which work up the available material until a protein exists which is stable in presence of the enzyme, Burnet suggests that the living protein molecules within the cell are themselves possessed of proteinase activity and continually produce replicas of themselves. Such proteins as those in the blood and in glandular secretions may be regarded as partial replicas of the living protein unit responsible for their production.

Antibody globulin is probably synthesised within cells of the reticulo-endothelial system by certain proteinase units of the cells. These units are modified by contact with foreign antigens and liberate partial replicas of themselves into the blood and lymph. This modification is not to be regarded as resulting from a synthesis of a new unit in spatial contact with the antigen but rather by a process analogous to the production of adaptive enzymes of bacteria. Certain bacteria, by culture for some time in the presence of a sugar not normally fermented, will acquire the property of fermenting it; contact with the sugar can impress on a bacterial enzyme a new specific power of acting on the new substrate. Similar changes in some bacterial enzymes responsible for protein synthesis have been demonstrated and in certain instances the changes are inherited. In the light of this work on adaptive enzymes of bacteria it is suggested that the primary modification of the proteinase within the antibody-producing cells is such a reorientation of its atomic structure as is necessary to allow its effective hydrolytic activity on the foreign antigen. The modified proteinase retains its modification during subsequent production of complete or partial replicas. In the absence of further contact with the antigen, however, successive new formation of replicas of the modified proteinase will probably gradually eliminate the impression and ultimately normal globulin will be produced. In the intermediate stages, low-grade antibody which unites less readily with the antigen will be formed. Further contact with the same antigen will, on the other hand, intensify the impression and an opportunity will be presented for modification of other aspects of the proteinase to occur. This hypothesis explains the observed difference between antibody produced in response to a primary stimulus and that obtained at the end of a long series of injections.

The hypothesis suggested by Burnet and his colleagues has some features in common with Ehrlich's theory. The intracellular proteinase would correspond to Ehrlich's cell receptors, which by contact with antigen became diverted from their normal function and were produced in excess. Ehrlich's view that superfluous receptors shed into the blood-stream constituted the specific antibody is not very different from Burnet's conception of antibody as the partial replicas of modified intracellular proteinase. We are still ingorant of the biochemical processes involved in the formation of these intracellular proteinases and further knowledge may have to await the development of new methods. Although antibody formation by tissues cultivated in vitro has been studied by a few workers refinements in the technique of tissue culture and methods for the cultivation of single cell types might provide a means of investigating certain questions which are still unanswered. The chief advantage of the new hypothesis over the orthodox theory of antibody production is its power to interpret the qualitative changes in antibody which accompany prolonged immunisation. It is compatible with most of the established data and should prove stimulating to workers in the field of immunology. A. W. D.

A PLACE FOR THE ASSISTANT NURSE

THE reconstruction committee of the Royal College of Nursing, under the chairmanship of Lord Horder, has come at once to the point over a fundamental question in nursing today. Should the assistant nurse become a recognised part of the nursing service? The Alness Committee, it will be remembered, in its findings for Scotland, was against giving her official status; but since then the Civil Nursing Reserve in Scotland has recognised the grade officially. The Athlone Committee considered that assistant nurses should be controlled and their position regularised; and the Horder Committee, in the first section of their report,[1] are firmly of the same opinion. Assistant nurses have been defined as women who, being neither state registered nor in training for the state register, undertake nursing for a livelihood. The committee estimate the number of assistant nurses working in Great Britain at "many thousands" even though they have deliberately left out of consideration at this stage those nurses holding the certificate of the Royal Medico-Psychological Association. It is fair to say that the nursing service of the country at the present time could not be maintained without the aid of assistant nurses, and Lord Horder, looking at things from the national rather than the sectional angle, in his foreword described their position as pivotal. The aim of all bodies interested in nursing today is to ensure a complete service, preventive and curative, for everybody in the country. In such a service the assistant nurse can take a useful part, the committee believe, not only in caring for the chronic sick—in which she is already prominent—but in dental clinics, factories and other routine services, attached to private nursing coöperations, associations or nurse supply agencies, working independently or employed in hospitals and nursing-homes—always provided her work is controlled and supervised.

State-registered nurses may be forgiven if they do not at once take kindly to the suggestion that a lower grade of nurse should enter all the spheres where fully qualified women are already working. Industrial nurses have already protested in the press against the idea that an assistant nurse would be fitted to deal with acute injuries and fractures in factories. But in a large factory assistant nurses may well form a useful team working under a state-registered nurse, especially in departments (packing or sorting) where the liability to gross injury was slight. Indeed, the Ministry of Labour

1. Obtainable from the secretary, Royal College of Nursing, 1, Henrietta Street, W.1. 1s.; post free 1s. 2½d.

and National Service has recently suggested (Form 327) that, provided a fully trained nurse is in charge, additional assistance can be given by "one or more less well-qualified but suitably trained persons." Opposition to a second grade also comes from state-registered nurses in private practice, who naturally suffer from unqualified competitors, and who would suffer still more, presumably, if these competitors were given official standing. Others oppose recognition of the assistant nurse because they know little, perhaps, of the valuable part she plays in the care of the chronic sick. The fact remains that since the outbreak of war the demand for nurses has increased, and the sources of supply—never adequate, even in peace-time—have shrunk. It has been suggested that the standard of the state examinations should be lowered so as to bring them within range of the capacity of those who are now assistant nurses; the committee are against any such drastic reduction of standards, considering that the institution of simple practical tests for the assistant nurse would be a much better plan.

Assistant nurses have come into being in a haphazard manner; at present a student nurse can abandon her training to join a coöperation or agency as an assistant nurse, and is then in a position to return to her own training school in that capacity at a far higher rate of salary than her colleagues. True she no longer has the chance of qualifying and gaining promotion, and she will probably be limited to routine tasks and a fixed salary for the rest of her life: but this may suit her ambitions and her capacity. The committee recommend that assistant nurses should continue to be known as such and that they should be enrolled under the General Nursing Council. Nursing then should be a closed profession, practised—except for student nurses, and assistant nurses under instruction—only by state-registered nurses and enrolled assistant nurses. Instruction would last two years, and be preceded by a period in a preliminary training centre. The first year would be spent in a hospital for the chronic sick; in the second year the assistant nurse would have experience in fever, mental or tuberculosis hospitals, and would return to nurse the chronic sick while attending classes in cookery and occupational therapy. The examination recommended is a simple practical oral test lasting at least an hour. The qualified assistant nurse would wear a distinctive, attractive and serviceable uniform, and employing authorities throughout the country would be encouraged to adopt it for those in their service. The General Nursing Council would be responsible for inspecting approved centres of instruction. The committee are not in favour of student and assistant nurses being taught together. It is suggested that during the period of preliminary training the assistant nurse should get 10*s.* weekly, and during the rest of her training should be paid at the rates laid down for the first and second year student nurse. After enrolment she should get, in hospital, £70 yearly, rising by annual increments of £5 to £95 (that is, within £5 of the starting salary of a state-registered staff nurse.) To encourage her to stay in one post, long-term service should be rewarded by five-yearly increments of £5. Superannuation would be obligatory. In private practice it is recommended that she should receive £2 10*s.* a week, with board, lodging, travelling and laundry.

The committee deal clearly with the misconception that the establishment of two grades of nurses would mean that the poorer patients would only get the services of the lower grade of nurse. They stipulate that the patient's physical condition would decide what grade of nurse attended him. Coöperative and nurse-supply agencies would be required to send to the applicant for nursing service, within 24 hours, a form setting out the professional status of the nurse sent out; and the nurse herself would be required to carry a card showing whether she was on the register or on the roll of assistant nurses.

Legislation would be necessary, of course, to put these suggestions on the statute book, and the committee recommend measures to prevent hardship to practising assistant nurses if such an act should become law. They would have to provide evidence of the justice of their claims and to apply within a year for inclusion on the roll. They would have to be at least 20 years of age, and would have to show that they had had two years instruction in an approved hospital, and that they were of suitable character. All others would have to take the prescribed course of instruction.

MEDICINE AND THE LAW

Professional Liabilities in War-time

ADDRESSING the annual meeting of the Medical Defence Union last week, Dr. James Fenton, the president, said that the war has not, as some have thought, diminished medical litigation. And he went on to draw attention to the possible liabilities of a medical practitioner when following his profession as a member of HM Forces. If negligence be attributed to him, he must not expect the state or the military authorities to accept responsibility. It is true that, if the driver of an Army lorry or a Post Office van runs over a pedestrian in circumstances resulting in a claim for damages by the injured person, the Treasury Solicitor usually steps up unobtrusively behind the defendant and undertakes the defence as well as finding the money which may be awarded as compensation. The plaintiff in such cases has a somewhat nugatory legal right to sue the driver personally, and no right at all to sue the Crown which is his employer. What the Treasury Solicitor may do is done as an act of grace; it by no means follows that he will undertake the defence of officers of a medical unit if they are sued for damages for negligence; the view may be taken that the doctor can reasonably afford to pay for his own litigation and to satisfy claims based on allegations of want of professional skill and care. Nor can the Treasury Solicitor be expected in any event to bring to the aid of a defendant doctor the same specialised skill as the lawyers who conduct litigation on behalf of the medical defence societies. As the societies are assisting medical officers on charges before courts-martial as well as in the common-law courts, the importance of continuing membership of a trustworthy defence organisation speaks for itself.

The task of the societies indeed grows no less in war-time. The doctor who remains in non-military practice may find himself short-handed and overworked; his partner may be absent on service and assistance may be difficult to obtain or inexperienced. If the practitioner finds himself hard pressed and hurried, that is just the time when those careful records are omitted or those certificates are less exactly worded which involve the risk or threat of distracting and expensive proceedings. A medical attendant, intent on doing his best for his patient, cannot always be taking every precaution for his potential justification in the contingency of his appearance as a defendant in court. Medical practice conducted with one eye on a prospective judge and jury is by no means necessarily in the interests of the patient, and when he is hard pressed the conscientious doctor will think of his patient's safety rather than his own.

SUBDURAL HÆMATOMA

ACCORDING to D. Furtado, there are few intracranial lesions as interesting to so many branches of medicine and surgery as subdural hæmatoma (*Amatus Lusitanus* 1942, **1**, 165). The lesion may be defined as a collection of blood, more or less organised, beneath and adherent to the dura mater. Its evolution may be chronic or subacute, rarely acute, and its origin traumatic or spontaneous. Traumatic cases comprise some 60% of the total; the trauma may have been comparatively slight, and may have been followed by a long or short latent period. The non-traumatic form may complicate any acute infective illness (pneumonia, scarlet fever, &c.) and is probably an inflammatory lesion—a form of infective hæmorrhagic pachymeningitis. The symptomatology is extremely variable, but the three cardinal symptoms are headache, psychical disturbances and eventual onset of coma. The headache is often localised to the area of the hæmatoma, and the skull here may be tender on percussion. Psychical disturbances are observed in about 50% of the patients. In making a diagnosis a ventriculogram or arteriogram may be of great service. The treatment is essentially surgical, analysis of the available figures showing that without operation the outlook is black, while with operation 80% of cures may be expected.

In England Now

A Running Commentary by Peripatetic Correspondents

As a foundation member I have probably abused the EMS as much as anyone but I am still a member of it and have now arrived at the stage when I am prepared to admit that it has not turned out too badly. But there are still features of it to which I object. Why, for instance, should I have to sign an elaborate form every month, certifying this that and the other, before I receive my salary? No private institution to my knowledge has such a low opinion of its employees, and even I hate to draw the conclusion that the standards of honesty of the civil service are such that these forms are necessary. Perhaps the boot is on the other foot and it is we temporary civil servants who are under suspicion, our permanent colleagues not being quite certain whether we can ever attain to those laudable ideals which have for so long characterised a Service which by virtue, &c., &c. A much less personal grouse is the timidity with which the Ministry has run the EMS. Why must we have this roundabout technique of the Ministry refusing actually to run a hospital and insisting that the organisation shall be in the hands of a local authority, the Ministry keeping well in the background and surreptitiously slipping an occasional cheque into the pocket of the local authority just to cover expenses? Is there any reason why we (i.e., the EMS) should be treated as a bastard whose father means well but must be oh so careful lest its parentage be recognised? Surely the shibboleth of "state medicine" no longer carries any fears, and would this not have been a magnificent opportunity for the Ministry to show just how well it could organise and run a hospital service (overlooking for the moment its origin on the principle that bygones should be bygones)? Or would it not have been an excellent chance to gain invaluable first-hand experience of what running a hospital service really means?

As far as I know my standard of work, my enthusiasm for my profession, my zeal for my patients have not deteriorated since I became a "civil servant." I am not aware that I watch the clock lest I should arrive a minute before time or leave a moment after time. I do not recall ever refusing a night call because I had already completed my statutory hours of work for the week. It has never come to my knowledge that my patients have been deprived of any drug or preparation because the "State" considered it a luxury. Granted that the nursing is not what it might be, but all comparisons are invidious, especially when one has always worked in teaching hospitals, and considering the present chaotic position of the nursing profession, with its acute shortage of recruits, our nursing attains quite a reasonable standard. However, I may have been lucky in my experiences. I work in a London sector where the sector officer is a personal friend, and, like many of my colleagues, belongs to my own teaching hospital. My house-officers are old students of mine and I still retain close connexions with my old hospital. The result is that while officially we may be civil servants we still work according to the old traditions.

* * *

A request to have finger prints taken usually implies a clash with the forces of law and order, but it was carefully explained that it was now customary to submit a set before travelling in the Western Hemisphere. In the room was a figure similar to the one mounting guard over the presents at prewar weddings, so it was fairly evident who was to take them. This mountain of flesh was kind enough to say that obviously I had not undergone the experience before. I wish we could meet again, because in the course of entering and leaving 29 different countries in thirteen weeks, I have since acquired considerable skill in the technique; I might even give him a few tips. A curious sidelight on travel nowadays is that the better one's credentials the more solemn the formalities, whereas the wicked seem to flourish despite irregularities. However, their end, when it does come, is inclined to be abrupt.

The bus to the airport was quickly loaded and on its way, through the dark and often damaged streets. It was obvious directly the gate control had been passed that no latitude was allowed to individual travellers. On alighting our little knot was led into a small room by a sergeant of the Security Police, where embarkation cards were filled up, and the customs officers and censor did their stuff. Then there were interviews for personal questioning with the Security Police and emigration authorities, to whom we were submitted one at a time in a side-room; what was my profession, did I have any special branch, was my journey abroad in connexion with this, and so on. All these formalities completed, passengers were taken into a pleasantly furnished waiting-room with a fire and offered tea and biscuits, which were welcome, for it was nearly 9 A.M. and breakfast seemed a long time ago. It was now possible to observe the travellers in more detail. The oldest was a grey-haired Canadian who was acting as one of Roosevelt's "dollar-a-year" men and had repeatedly made the journey by one route or another between England and America.

To anyone like myself who had never flown before, the whole set-up of the preliminary arrangements, efficient though they were, detracted from the thing itself. We were led rapidly to the awaiting Douglas machine, seated inside much as if it were the village 'bus, and in fact the number and arrangement of the seats, twelve in all, were similar but for the greater leg room and the soft upholstery. The blacked-out windows of the plane prevented any orientation or observation apart from the altimeter on the forward bulkhead which separated the passenger accommodation from the wireless gear and control cabin. A member of the ground staff warned all passengers that a descent would be made in about thirty-five minutes; with that the outside door was shut and off we went. The take-off was much as anticipated, but the runway was so smooth that there was not the sudden sensation of being airborne, as described in the books. Once the machine had settled down on her course, rather like Jemima Puddleduck, the engines were noisy but this was not so trying as the vibration experienced if one leaned back too firmly in the seat. Subsequent journeys in numerous planes suggested that this matter of vibration is an idiosyncrasy of certain machines, much as in ships.

In due course we descended at an aerodrome for fuel to take us on the hop across the sea. It was a typical, Service aerodrome, though a special waiting-room had been set aside for civilian passengers from which the ordinary events of the day could be watched during the wait. The single line of railway alongside produced one thing of interest—a tank engine which despite its army paint could not hide its Stratford origin. When one thinks of the duties these Holden engines, despite their age, still do on their home tracks, it probably accounts for their popularity in a second war.

At this take-off everyone felt we were now really getting down to the day's work; it was already 10.30. After about twenty minutes' flying the blackout was removed, and there we were 3000 feet up in brilliant sunshine above the clouds. The clouds completely obscured any view of the sea, but from time to time in the afternoon gaps allowed us a glimpse. There were no ships about or signs of life till the coast of Portugal was sighted. Luncheon appeared at 1 P.M., served by the radio operator. It consisted of a well-made green-pea soup, cold ham with bread and green salad, followed by coffee. It says a lot for the steadiness of the plane that it was possible to fill the soup plates completely. At last we reached Cintra airport, 27 kilometres from Lisbon, and made a good landing on an aerodrome, much churned up because there was no proper runway for heavy planes. We finally came to rest alongside a German plane, a JU 58, and an Italian plane, on both of which mechanics of characteristic faces were working. It seemed strange that they were still tolerated in Europe. Evidently the Portuguese and other officials did not consider this sight good for us, for we were rapidly conducted into the airport building where normal customs and passport business was conducted. Each company using the aerodrome had its own section of the building opening from a central waiting-hall. From here passengers were called one by one to answer any questions by the passport control, who only asked me if I was married and accepted my "yes" without request for supporting evidence. The country between Cintra and Lisbon reminds one of Surrey except for the white houses and the donkey carts. The roads are good and the whole place has an air of prosperity not usually seen on the Continent.

The stories current in England about the difficulties, and particularly the uncertainties, of trans-Atlantic travel seemed gross understatements when one heard about them from actual sufferers. It appears that air priorities are worth less than the paper they are written on, partly through the irregularities in the service and partly through competing interests for its use. The result is that men have wasted weeks of their time in Lisbon till, before the United States came into the war, they transferred in disgust to the American Export Line which kept a weekly service to New York in operation with great regularity.

Having sorted out matters at the different offices we all, for different reasons, paid a call at the British Embassy, my own purpose being to start arrangements for the return journey. The comments in the *News Chronicle* about those in high places obtaining flights to England for butlers and women not on journeys of national importance had not passed unnoticed, but in Lisbon the embassy staff is clearly not to blame for happenings outside their control. My colleague, M, had had a room booked for him at the Hotel Aviz and kindly arranged for another one which had to be at the Hotel Berges, quite a good house about a mile distant, more in the centre of the city than Aviz. My hotel was comfortable though expensive, but so is everything else in Lisbon except the taxis. The drivers of these wonder how long they will remain so owing to increasing petrol shortage which has already caused private cars to be laid up three days a week. In the evening M and I dined at the Aquarium. Dinner there should start with fish hors-d'œuvres, which could easily be a meal in itself judging by the array of prawns, langoustines and sea snails presented to you. A small steak and onions with a bottle of local red wine afterwards proved to be our measure despite the many hours that had elapsed since our aeroplane lunch. What with rationing at home and austerity outside I found I had got out of the way of tackling an old-fashioned dinner. Next day I talked some shop. Through German influence the use of azosulphonamides locally into wounds of any kind seems to be the universal practice. Portuguese medicine taken as a whole may not be of a high order, but it does seem a pity that little is done to assist it from England, a country to which it looks for guidance.

* * *

When Mr. Churchill called Mr. Aneurin Bevan "a merchant of discourtesy" rather than discourteous I take it that the PM meant that he gathered discourtesy wholesale from his friends and dispensed it retail to his enemies. The real reason for much of the crude criticism of the Government, especially from the younger critics, is that the belligerency engendered by the war has found in them no other form of expression. They feel they are frustrated in that many of the politicians who played no small part in losing the peace of 1918–39 are still in high office, but if their warlikeness was given some vent their attitude might be more virile and less virulent. Perhaps that tardy sanity, which has recently banished the emasculated voice of the crooner from the studios, which has after 3 years of sea warfare made Service decorations open to members of the Mercantile Marine, might next time we land in France invite Mr. Bevan, Mr. Shinwell, and the like to go with the broadcasters and watch it, not in order to work the Uriah trick on them, but so that the psychological effect of a first-hand encounter with war might benefit them and the Mother of Parliaments.

* * *

She's a billeting inspector who has to travel long distances by car on a slender ration of petrol. "I ran dry yesterday afternoon," she said, "miles from anywhere, so I put an SOS on the windscreen and went to sleep. I was wakened by a tall, handsome man in a car who was travelling in the opposite direction. I told him of my plight so he turned his car, produced a rope and towed me to X, where I live. I gave him some dinner at a pub and found I had no money, so I got the waiter to cash me a cheque. I then got a bed for him at the house of a friend of mine, gave him some breakfast and off he went." "I suppose you knew him?" I asked. "No, never saw him before in my life." "What was his name?" "Jack," she replied. Aren't women wonderful?

Letters to the Editor

CONSIDERATE TONSILLECTOMY

SIR,—Mr. Layton's ideals (July 4, p. 24) regarding a close season of 3½ months for tonsillectomy and an allowance of 20 minutes for each case of tonsillectomy would be hard to achieve in a voluntary hospital where the greatest good of the greatest number must go hand in glove with economy, both of time and of cost. Consideration of the time factor in surgical cases may be all wrong, and Mr. Layton thinks it is, but under the present hospital system, with a limited surgical and nursing staff and a steadily increasing waiting-list, it must go on.

We find it difficult to believe that Mr. Watson Williams (July 18, p. 83) is serious when he suggests that basal narcosis for tonsil operations in children is a luxury. We assert that basal narcosis should form an essential part of the preparation for all operations on children, and in our experience its omission has frequently resulted in psychic disturbance, the worst form being an inferiority complex which may persist over years as a serious handicap.

We appreciate the points made by Major Belfrage (Aug. 8, p. 168). In the individual case the induction of anæsthesia in bed is excellent practice, but in batches we find it better to move the patient to the anæsthetic-room or the operating-theatre for the induction and leave the sleeping patients in the ward undisturbed. Major Belfrage makes out a strong case for operation on children in the evening. This does not appeal to us, largely because the difficulties regarding nursing and the presence of the family doctor at the operation in the evening are considerable in this area. The nursing staff and the aural house-surgeons here assure us that they have not seen any degree of postanæsthetic restlessness suggesting the need for 'Nepenthe' or any other sedative, and that the patients invariably sleep well the night after the operation. We do not consider that the combination of barbiturate and opium is either absolutely safe or foolproof, and for this reason we do not think that the administration of nepenthe for occasional postanæsthetic restlessness should be included as part of the routine technique.

Since our paper of June 27 was written, we have had further experience of another 600 cases of basal narcosis with oral pentobarbital soluble ('Nembutal') for tonsil operations and we reaffirm its safety and the benefits that accrue to the patient and all those concerned with the patient's welfare.

Royal Aberdeen Hospital for Sick Children. JOHN GERRIE.
J. ROSS MACKENZIE.

SICKNESS RATES FOR WOMEN

SIR,—In the special article on the report of the Committee on Amenities and Welfare Conditions in the three women's Services in your issue of Sept. 19 (p. 343), it is said that "As in industry the sickness rates for women in the Services are about twice as high as those for men." But this has certainly not been the experience of the Post Office which, before the war at any rate, was numerically speaking the largest industry in the country. In the five years prior to the war, the average yearly sick-rate of some 35,000 to 42,000 women was never as much as two days higher than that of the men (varying from 120,000 to 135,000) and in most years it was less than a day and a half higher—i.e., it was never more than 17 per cent. higher. Nor as a whole, even in war conditions have the sickness rates of women as compared with men ever approached such a proportion as assumed in the sentence quoted.

London, E.C.1. H. H. BASHFORD.

UNSIGNED REVIEWS

SIR,—I have from time to time been encouraged to protest against the abuses of anonymity under cover of which reviews of books are often published. May I take as current example the unsigned review (*Lancet*, Aug. 29, p. 264) of E. B. Ford's *Genetics for Medical Students*. "The basic concepts . . . are not explained very clearly . . ." is a serious criticism, if true. It is not substantiated by any example in the *Lancet*. In a signed review of the same book in *Nature*, F. W. Sansome

comments on the "straightforward and clear manner" in which the author "outlines the principles." If this is a matter of personal opinion, surely readers of the *Lancet* deserve to know whose opinion they are reading, so that they may judge whether the writer has one-tenth of Mr. Ford's experience in university teaching.

The *Lancet* reviewer complains also that human polymorphisms "are perhaps given more place than they deserve in a textbook for students." The reviewer in *Nature* thinks that "chapters on polymorphism . . . answer many problems of the medical and sociological worker."

It is, of course, too much to expect of any reviewer to appreciate all sides of a rapidly developing subject. I do, however, suggest that those who write publicly over their own names do tend to limit their imputations to points which they really are in a position to substantiate. Signed reviews should be encouraged, if only on the ground that the writer whose name is published does usually render better service to the public, on whose behalf he has read the book.

Galton Laboratory. R. A. FISHER.

SOLDIER'S DOCTOR

SIR,—Your leading article of July 4 must have been inspiring reading to the younger generation of doctors and was certainly pleasing to those who passed through the crucible of 1914–18 on active service in the field. During the last war all the younger doctors, and many of the older ones, scrambled to get into one or other of the Services at the earliest possible moment. Their engagements up till 1917 were only for one year, and one of the duties of an ADMS of a division, or commander of a medical unit, was to persuade his officers to carry on from year to year. Very few of them "chucked it" and most stayed on in the Services even in the face of heavy financial losses. I have not met one who regretted his military service. On the contrary one eminent specialist has insisted that his service with the RAMC "made" him. Both the present presidents of the Royal Colleges served in the RAMC in the last war.

May I emphasise the point you make, "Professional knowledge is not enough to make a first-class army doctor," and did not one of the greatest of physicians and teachers say that the doctor who only knew medicine did not even know that? Very little consideration must bring home to the young doctors of today the advantage of meeting men outside their own upbringing with different aims in life, and that this is quite as valuable a training for after-life as years of hospital appointments. I am sure that experience gained in the war has left those who have had the advantage of it better doctors than they could have been without.

London, E.C.4. R. J. BLACKHAM.

DEATH CERTIFICATION AND CONGENITAL SYPHILIS

SIR,—I have read with considerable interest Dr. Miller's remarks on certification of death in infancy and your leading article of Sept. 5; likewise the report by Spence and Miller to which both refer. It must be obvious to those who have given the matter any consideration that the death certification of infants and young children leaves much to be desired and as matters are at present it is almost valueless statistically. Some years ago when discussing the incidence of congenital syphilis with the late Dr. T. H. C. Stevenson of the Registrar-General's department I expressed the opinion that the annual figures of that disease as published by the department were fallacious and valueless; for how many practitioners (outside a hospital) would certify a baby's death as being due to congenital syphilis even if they were certain of the diagnosis; in addition to which some atypical cases would be missed.

Generations of practitioners have recognised or believed that miscarriages, stillbirths, and premature births were frequently the result of maternal syphilis. The Newcastle report mentions that 47 infants under the age of 4 weeks, out of a total of 138 deaths at this age-period, died of prematurity alone and I believe it is highly probable that some of these were the result of maternal syphilis. D. P. R. Keizer (*Amer. J. Dis. Child.* January, 1940) found syphilis the cause of prematurity in 33 out of 858 cases (3·88%) and possibly more among 259 cases due to "unknown cause." But neither Dr. Miller nor your leader so much as mentions the word syphilis, and as no mention is made of antenatal serological blood tests these presumably were not carried out. The report itself devotes four and a half lines to syphilis and states that "only one case of clinical congenital syphilis occurred throughout the year . . . and there were *no reasons to suspect other cases except one* [italics mine] in which a mother who had received treatment some years previously gave birth to a premature child which died after a few hours." Some indication of the probable connexion of syphilis with this death from prematurity should, in my opinion, have been given in table v of the report (causes of death). The words I have italicised are important because syphilis may be present in a family without there being any reason to suspect it.

It is, or should be, common knowledge that conceptional syphilis usually gives no indication of its existence in a woman until the birth of a dead child, a premature infant or a syphilitic child, and it is only by the routine blood testing of all pregnant women that such cases can be discovered. This is desirable even in peace-time, but in war-time with its inevitable increase in the incidence of venereal disease it is essential if we would do our duty to the state and to the coming generation. Surely after 25 years' experience in venereal disease we are not going to repeat one of the tragedies of the last war and allow thousands of congenitally syphilitic children to be born and many of them to die annually. In the seaport towns in particular it is imperative that all expectant mothers should be blood tested. It may be said that there are not enough serologists left in civil practice to carry out these tests; if that is the case why should not the pathologists who are in the Services help in the matter whilst they are available in this country, and whilst other serologists are being trained? It is an urgent matter and at the moment the nation is one and indivisible.

Leatherhead. DAVID NABARRO.

NITROUS OXIDE ANÆSTHESIA

SIR,—The very balanced viewpoint expressed in your leader "Anæsthesia for the Belly Wound" (Sept. 5, p. 283), and the fact that those whom you call the "not so expert" are now being called on in increasing numbers to give anæsthetics, prompts me to amplify your few remarks on nitrous oxide with oxygen. This, as you say, is often the first choice of the not-so-expert anæsthetist, but would, in my opinion, in many cases be better avoided in favour of open ether.

Nitrous oxide with oxygen is an anæsthetic agent capable of producing unconsciousness only; it never produces any degree of muscular relaxation. Its abuse for the latter purpose always implies suboxygenation, while, as you rightly point out, even for the maintenance of unconsciousness suboxygenation is often difficult to avoid. In this connexion some recent teaching has been unfortunate. The statement, for example, that cyanosis is of no significance in the absence of respiratory obstruction would, I think, be impossible to justify on physiological grounds. Many writers have confused the issue by placing undue emphasis on the fact that in cases of plethora cyanosis does not imply anoxæmia, for such cases are rarely seen in the theatre. Because patients with polycythæmia are cyanosed in the presence of adequate oxygen, one certainly cannot conclude that cyanosis in other conditions may be disregarded as a sign of oxygen lack. The emphasis should rather be placed on the fact that most patients are either anæmic before they come to operation, or become so during its course. Such patients may be anoxæmic without showing cyanosis, the more so the greater the degree of their anæmia.

In the absence of cyanosis, the recognition of anoxia, especially in its minor degrees, is very subtle. Of the signs usually described, alteration in respiratory rate or rhythm is often obscured by premedication, while lowered blood-pressure, reduced pulse-pressure and increased pulse-rate are late signs. In the light of present knowledge it seems wise to regard all cyanosis (except where the hæmoglobin level is known to be raised) as positive evidence of anoxæmia, while in cases where this level is lowered the only way to avoid anoxia is to increase the oxygen percentage in the mixture above the minimum level necessary to keep the patient pink. This technique may

often necessitate a supplementary agent to enhance the effect of the nitrous oxide, and in my opinion the use of such a supplementary agent is more often evidence of skill on the part of the anæsthetist than of the lack of it. Of such agents, ether is in many cases, and especially for the not-so-expert, the safest, simplest and best. If skilfully administered this does not necessarily imply, as many American writers assert, that the gases are used merely to volatilise ether, or that the ether becomes the main anæsthetic agent of the mixture. Even were this the case, which I doubt, the changes produced in tissue cells by anæsthetics skilfully administered are almost certainly reversible. Those produced by anoxia, even of minor degrees and especially if prolonged, are as certainly not reversible. Expertness of administration, since it cannot mitigate the effects of anoxia, shows itself in its recognition and avoidance. Thus, the statement that nitrous oxide with oxygen is the safest anæsthetic agent is subject to considerable qualification.

Goodmayes, Essex. R. BLAIR GOULD.

VITAMIN C IN PERNICIOUS ANÆMIA

SIR,—I believe the following case-summary supports the view of Dyke, Della Vida and Delikat (*Lancet*, Sept. 5, p. 278) regarding a vitamin-C deficiency in irresponsive pernicious anæmia.

A single woman, aged 60, was found to have a severe macrocytic anæmia in March, 1942. On March 24: red cells 2,500,000, hæmoglobin 52%, anisocytosis, poikilocytosis and large macrocytes. In spite of massive doses of liver intramuscularly, the reticulocyte response remained very poor; the blood showed little improvement at first, and deterioration later. On April 27 the red-cell count was 3,200,000 per c.mm. and hæmoglobin 70%, but by May 13 these had fallen to 2,100,000 and 45%. It was then suspected that the patient had a carcinoma of the stomach and a hopeless prognosis was envisaged. From June 15, 150 mg. of vitamin C, in the form of 'Redoxon,' was given daily, the liver injections being continued. A clinical response was rapidly apparent, and the blood-picture began to improve after five weeks. On July 31: red cells 3,800,000 per c.mm. and hæmoglobin 52%. On Sept. 14: red cells 3,900,000 and hæmoglobin 74%. The red cells showed no poikilocytosis but distinct anisocytosis and some polychromasia. The treatment has been continued and the improvement has been maintained. The patient is now ambulant and is gaining weight.

My single case did not permit of any valuable inference, but in the light of the three cases now reported in your columns, it seems that vitamin-C estimations in intractable cases of pernicious anæmia may throw further light on this condition and provide a promising line of therapy.

London, N.W.8. S. C. LEWSEN.

HEN WLAD FY NHADAU

SIR,—Your peripatetic correspondents are always delightful, but none has given me greater pleasure than he who recently has been "standing" in the Market Place at Portmadoc. Had not his companion pushed him into his car, indubitably he would have become possessed of a packet of inferior razor blades at an exorbitant price; I recognise this seedy looking individual as an old and amazingly successful importunate friend. I assure your correspondent that the Welsh are not a sickly race—kindly and sensitive to suffering in their small community living in this wild land of narrow valleys and knotted hills, but, please, not a sickly race. Incidentally, I wonder if one listened to two Englishmen talking Welsh what the conversation would be about. Very improbably would it be about the historic occasion centuries ago when not so far away from Portmadoc the Welsh swore fealty to the English, since when none have been more loyal than they, remaining true to the defence of their country and liberty. "For these they fight, for these they undergo hardships, and for these they willingly sacrifice their lives. They deem it a disgrace to die in bed, and an honour to die on the field of battle." Your correspondent will recognise this quotation from the writings of Giraldus Cambriensis, and will I am sure subscribe to them when next he stands (and thinks) in the Market Square at Portmadoc. I wish it had been his experience not only to stand, but to see the loveliest view to the peak of Snowdon, and also to hear the music across the bay of the marching men of Harlech which will continue to sustain the valour of the proud people to which I have the honour to belong.

EXILED.

MD CANTUAR

SIR,—With reference to your note on the Lambeth degrees in the annual Students Number (p. 267), I beg to point out that the fourth and last such degree in medicine since the Medical Act of 1858 was granted to James Rogers of Swansea in 1880. Dr. Cecil Wall gave a full account of the various recipients of Lambeth MDs and MBs seven years ago (*Brit. med. J.* 1935, ii, 854). An interesting point is the fact that, by the letter of the act of 1534, the archbishop is only empowered to grant such degrees as were in use at that date; and, as the faculty of surgery is of recent development, it appears that he may not create masters and bachelors of surgery, while being competent to grant the MD and MB. With regard to the use of the title, it would be perfectly legal for one who is already on the Medical Register to make use of his title if granted a Lambeth degree; even Bye-law CLXVI of the College of Physicians only prohibits its diplomates from assuming the title of MD if they have not obtained a degree—it does not mention whether the MD comes from a university or not.

This correspondence draws attention to one serious need in our system of postgraduate facilities; since the Durham (Practitioners) MD was abolished in 1932 no way has been left open for the non-graduate practitioner to obtain a medical degree. It was to meet the need of deserving non-graduates in times gone by that the archbishops used their prerogative; and anybody who examines the list of Lambeth MDs will see that they used it wisely and well.

Canterbury. R. R. PREWER.

LIAISON

SIR,—When in doubt consult the *Oxford English Dictionary*—so I did so. The result was something of a shock. Liaison means (*a*) a thickening for sauces, (*b*) a close connexion, (*c*) an illicit intimacy, (*d*) the joining of a final consonant to a following word commencing with a vowel, and, at last, (*e*) combination and coöperation of allied forces or arms of the same force. As a medical officer in the Home Guard I have been constantly exhorted for eighteen months past to liaise (a new verb for the *OED*) with civil authorities and the RAMC. This has made me study the conditions necessary for "combination" and "coöperation." Curiously enough most of these conditions are provokingly absent. The first condition is that one should know something about the other man's job. This can best be found out by asking him. It is therefore disconcerting to meet with the reply that there is no order in the civil defence services touching the matter of liaison with the Home Guard, and that pending the arrival of such order nothing can be done about it. There are indeed many officers of the civil and municipal services who are prepared to go ahead without waiting for an order, but there are still far too many whose attitude is otherwise. Another way of learning about the civil defence services is by listening to lectures about them. Such lectures are occasionally available, but they are not enlightening for the very good reason that the speakers do not know the job of their Home Guard audiences and are therefore unable to visualise the points most important to them. And when some important (to us) question is asked—for example, what is the equipment of an up-graded point—the speaker is found to have no knowledge of the proper answer. The obvious remedy is that pre-liaison education should involve addresses by Home Guard medical officers to the heads of local civil defence services. I once managed to get permission to give such an address. Afterwards, my audience freely admitted that they had had no idea of the possibilities of invasion or of the combined responsibility of the HG and CDS in case of attack. Much the same is true of the RAMC. One seldom meets with unwillingness to liaise but almost always with a startling ignorance of the size of the HG and of its medical side. I have attended three or four official disquisitions upon the organisation of the RAMC (with which most of the HG audience was already pretty well acquainted), but only once have I heard of the RAMC being addressed by a HG medical officer. These difficulties might easily

be removed, but the initiative would have to come from above, very far above such humble persons as HGMO's.

There is another difficulty. Not long since I attended a Conference (so important as to deserve the capital letter) at which the highest officers of the HG, the RAMC and the CDS attended. We sat round a table for a long time. Then we had tea, and buns made with white flour (prewar stock belike). Then we did some more talking and finally the Chairman, a much decorated officer of the AMS, announced the result, which was that we had demonstrated that the machinery for liaison had been carefully laid down in orders and that there was therefore no more to be said about it. The machinery in question amounted to no more than an order that everyone should liaise with everyone else, and, being an Army order, it had not reached the civil authorities and even if it had would in no wise have been binding on them.

A matter has arisen which seems to make liaison even more necessary than hitherto. Both the CD Services and the Red Cross have been exhorted—in a somewhat casual and indefinite manner—to do what the HG has long been doing, namely, to set up minor casualty collecting posts at which the wounded can be retained for a while pending the arrival of ambulances. It is apprehended that this arrival may be much delayed in the areas affected by invasion. Surely a combined committee of the three services involved is essential if there is not to be confusion, overlapping and waste of personnel and material. But in practice it is almost impossible even to discover what either of the other services is doing about it. It is harder still to get any message through to those higher authorities with whom lies the power to compel combination and coöperation. So, if invasion comes, our wounded must await any happy chance that utter confusion may vouchsafe them. Let no-one believe that this is too harsh a picture. In emergency all will no doubt do their best for the wounded; but this is not enough. It is within our power as a nation to build up, especially in areas where invasion is most likely, so complete, all-embracing and coördinated a service that all wounded may know beforehand where help can be had, even if all ambulances must be off the roads, even if, as is certain, what ambulances there are prove wholly inadequate for the purpose. But for this purpose effectual liaison is essential *now*, not a mere liaison on paper but actual coöperation not less perfect than it has been made, for example, in the fire services. And it is for the highest authorities to take this problem in hand. The facile excuse that casualties and suffering are inevitable in war will never satisfy HG officers, whose men are their friends and neighbours for whom they feel something more than merely official responsibility.

Z. M. A.

MODEL WOUNDS IN FIRST-AID TEACHING

SIR,—I have found model wounds made with 'Plasticine' a useful aid in my course of lectures on first-aid. I had considerable experience in dressing injuries of all kinds during the air-raids in this neighbourhood and had the idea of recording them by this method. I first had the idea from seeing wax cameos made by Madame Tussaud's father, a French surgeon. The principal injuries were caused by broken glass, which inflicted terrible cuts. We also had to deal with incised wounds, gashes from flying stones and shrapnel, wounds with glass and odd fragments of metal still embedded deeply in them, and of course fractures of all kinds, both simple and compound. Having passed through first-aid classes we knew something of how to deal with these cases and prepare them for evacuation to hospital. After the raid I noted down the chief injuries and then as soon as possible made models in the following manner.

I prepared a background of calico smeared with thin plasticine on which I built up the wound with a "worm" of plasticine moulded in the shape of the injury and smoothed down on the outside by my thumb. Into the cavity thus formed I inserted broken ends of chicken and other bones according to the size of the real bones that had been fractured. I also inserted bits of glass, odd nails and bits of metal to represent other injuries with which we had to deal. When the plasticine was set I painted the whole model with bright red paint for arterial hæmorrhage and dark red, almost purple, for venous. The calico backing was also painted to match. The bones were painted bright red or dull red and the effect was most realistic.

When I gave my lectures I had friends to act as patients who were carried into the hall on stretchers or limped in if able to walk. I had previously fastened the "wounds" on their arms, legs, head, &c. by adhesive tape and painted the whole with cochineal. To add to the general effect I painted trickles of blood from the nostrils in the case of head injuries and long streams and smears of blood down the face and on the limbs. Perhaps my best effort was a "patient" whose abdomen had been ripped open by a bomb. This terrible injury was represented by lengths of rubber tubing, painted with cochineal and red paint of various shades, and fastened on with adhesive tape, with the body painted with cochineal. She came in screaming and I can assure you the effect was terrific. One woman almost fainted when I asked her to attend to this patient, and no wonder. She really looked awful.

Glass gave great trouble and most of my class wanted to pull out the pieces. This I had to prevent as it might have cut an artery. My "patients" acted their parts with great realism and fully entered into the idea. If the class tried to dress their injuries without first of all making them sit down they invariably fainted, and then it was discovered that a simple fracture had developed into a compound fracture.

I found it essential to rehearse the patients beforehand and coach them in their parts in accordance with their injuries. It is far more realistic when "patients" scream and cry when brought in to be dressed, or vary the performance by "fainting."

I shall be happy to show my model injuries to any readers who care to see them.

29, Carlisle Mansions, Carlisle Place, S.W.1. H. E. CROCKER

Public Health

From the Annual Reports

RESTRICTIONS on the publication of population figures make rates and numbers in the annual reports for 1941 meaningless, and enforced brevity has shorn accounts of unusual episodes of most of their value. The reports are thus no more than mark-time statements to ensure continuity of local public-health histories and ill repay the time, effort and material spent on them.

Dr. Henry Whitehead gives a table of the chief vital statistics of *Wigan* in decennia from 1876 which shows the dramatic changes which have occurred from the years of highest to those of lowest birth-rates. In 1876 the birth-rate of Wigan was 48·9, in 1936 it was 17·2. This reduction of nearly two-thirds was regular, but since 1936 the rate has fluctuated with no special trend in either direction. The death-rate fell from 28·5 to 12·8; since 1936 it has fluctuated with a trend towards increase. People born in the seventies are now dying out in the course of nature, but though the birth-rate fell rapidly in each decade from 1870 to 1930, the actual number of births increased, and the death-rates of the future are governed not by the birth-rates but by the actual numbers born a lifespan before. There will be no dramatic rise in the death-rate corresponding to the dramatic fall in the birth-rate during the past seventy years. Neither the zymotic death-rate nor the infantile mortality showed much change before this century. The zymotic death-rate was 4·9 in 1876 and 4·1 in 1896; but by 1936 it had fallen to 0·42 and it has fallen further since. Roughly in the last quarter of the nineteenth century the zymotic group killed 5 per 1000 population annually; it now kills less than 5 per 10,000. This means a saving of 180,000 good young lives annually. Infantile mortality was 186 in 1876 and in 1896, but by 1936 it had fallen to 82. The tendency of this rate in the present decade is to vary sharply from year to year, but on the whole the trend is about level. Though birth-rates and death-rates are but indirectly influenced by medical science—for all of us are born and all will die—zymotic death-rate and infantile mortality are directly, though not exclusively, under medical control. In theory we could reduce both to zero; we are getting near to this with the zymotic infections, and we are making headway towards it in infantile mortality.

Dr. J. A. Charles of *Newcastle-on-Tyne* compares the statistics of 1914–16 with those of 1939–40. In the early years of the last war the annual averages were: birth-rate 27·2, births 7443; death-rate 16·8, deaths 4619; infant mortality 131, infant deaths 978; pulmonary tuberculosis mortality 1·32 and deaths from cancer 267. In 1939–40 the corresponding rates and numbers were: birth-rate 16·7, births 4583; death-rate 13·8, deaths 3697; infant mortality 63, infant deaths 287; pulmonary tuberculosis mortality 0·90 and deaths from cancer 466. Notifications of enteric fever numbered 202 in the first two years of the last war, but only 15 in 1939–40.

Infectious Disease in England and Wales

WEEK ENDED SEPT. 12

Notifications.—The following cases of infectious disease were notified during the week: smallpox 0; scarlet fever, 1618; whooping-cough, 1074; diphtheria, 855; paratyphoid, 7; typhoid, 30; measles (excluding rubella), 2644; pneumonia (primary or influenzal) 319; puerperal pyrexia, 125; cerebrospinal fever, 62; poliomyelitis, 20; polio-encephalitis, 2; encephalitis lethargica, 1; dysentery, 146; ophthalmia neonatorum, 76. No case of cholera, plague or typhus fever was notified during the week.

Deaths.—In 126 great towns there were no deaths from scarlet fever, 1 (0) from an enteric fever, 1 (0) from measles, 3 (1) from whooping-cough, 17 (0) from diphtheria, 73 (6) from diarrhœa and enteritis under two years, and 3 (0) from influenza. The figures in parentheses are those for London itself.

West Hartlepool reported the fatal case of enteric fever. Liverpool and Birmingham each had 6 deaths from diarrhœa.

The number of stillbirths notified during the week was 226 (corresponding to a rate of 37 per thousand total births), including 17 in London.

Obituary

DAVID WATERSTON

M D EDIN, F R C S E, F R S E

Professor Waterston, who died in an Edinburgh nursing-home on Sept. 4, in his seventy-second year, following a persistent pneumococcal infection, was an anatomist and anthropologist who made excursions into physiology. He was of the Edinburgh school and all his life retained the hallmark of his association with his chief, Sir William Turner. He qualified in 1895 and after twelve years as demonstrator at Edinburgh University was called to the chair of anatomy at King's College, London, in 1909. When five years later he succeeded the late James Musgrove, in the Bute chair, at St. Andrews, it was a home-coming for him, for his father had been a minister in Dundee, and he was quickly accepted both by town and gown. For six years Waterston represented the senatus on the university court and from 1930–40 the university on the GMC. He was lately coöpted a member of the town council. He had been associated with Sir James Mackenzie in the foundation of the Institute of Clinical Medicine, and it was here that he carried out his investigations into cutaneous pain (*Lancet*, 1933, i, 943), and made the examination of Mackenzie's heart for which he had left instruction.

The department of anatomy, founded by Musgrove, although never large in numbers, was developed by Waterston into an excellent school. He was a brilliant teacher and knew how to illustrate his lectures with the neatness and skill shown to great effect in *The Anatomy in the Living Model* (1931). He also edited the *Edinburgh Stereoscopic Atlas of Anatomy*. Outside medicine his interests were mostly anthropological. A collection of his arrow-head flints is in the Bell-Pettigrew museum, and when St. Salvator's College Chapel was being renovated he examined the skeleton of Bishop Kennedy and reported on his findings to the Royal Society of Edinburgh.

In 1907 Waterston married Isabel Amy Simson, and they had three sons. Two are serving with the RAMC, the eldest in India and the second in the Middle East.

JOHN MacMILLAN

M B ABERD; MAJOR R A M C

John MacMillan was a delicate boy who early set his heart on becoming a doctor though his friends at the Aberdeen Grammar School sometimes wondered whether his physique would allow him to do so, and indeed throughout his student days he had to contend with recurrent attacks of illness. But though outwardly shy and diffident he was resolute of purpose and he graduated in 1936. He held resident posts at Walsall and Kettering general hospitals and spent eighteen months in general practice, but he had chosen public-health work as his career and shortly before the outbreak of war he was appointed ARP assistant MO for Southgate. He was combining this job with a course for the DPH, but when war broke out as member of the Territorial Army he was called up at once and sent to the Middle East at the beginning of 1940. He served in Palestine, Iraq and Syria and was mentioned in dispatches in April, 1941. He died on active service last July and leaves a widow who is also a graduate of Aberdeen.

ALWYNE THEODORE COMPTON

F R C S

Mr. A. T. Compton, who died on Sept. 9 at the age of 68, had been connected with the German Hospital in Dalston for 30 years. He retired to Seaton in 1938, but after the outbreak of the war he returned to the hospital where almost immediately he had a cerebral hæmorrhage with left hemiplegia, from which he did not perfectly recover. Compton qualified from St. Bart's in 1901 taking the surgical fellowship in the following year and later lecturing on anatomy at King's College. His *Essentials of Surgery* was a textbook in brief with a sound basis of surgical anatomy and pathology. Patients at the hospital will miss him for he was always kind to them. His case-notes mostly contained illuminating drawings. From his father, a well-known landscape painter, he doubtless derived not only his skill as a draughtsman, but also his love of walking and Alpine climbing.

DONALD SEYMOUR SCOTT

M B CAMB; M R C P; LIEUTENANT R A M C

Donald Scott, known to his friends as "Popa," was educated at Felsted School, where he was head of Follyfield House when he left in 1929. He went up to Emmanuel College, Cambridge, where he was a member of the OTC, played hockey for the Wanderers, and became an enthusiastic yachtsman. He qualified from the London Hospital in 1935, and took his degree two years later. A friend remembers him as one of the most contented and happy of men (seldom seen without a pipe), and he knew how to communicate his happiness to others. After holding house-appointments at the London Scott was appointed RMO at the Royal Masonic Hospital in 1938, and following some months in general practice he took the MRCP. When war broke out he joined up at once and was posted to a field ambulance under orders for overseas, and he was sent to France with his unit in January, 1940. In May of that year, while attending casualties in a forward dressing station, he was seriously wounded by an exploding shell. He was taken to a French hospital at Zudycote, and it has now been officially presumed that he died there of his injuries, although no definite information has been obtained. He was 29 years of age.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—The honorary fellowship of the faculty has been conferred on Mr. Geoffrey Jefferson, professor of neurosurgery in the University of Manchester.

Notes and News

MEDICAL PLANNING

C. O. S. BLYTH BROOKE, M R C S, D P H
MEDICAL OFFICER OF HEALTH FOR FINSBURY

THERE is grave danger of the introduction of a comprehensive scheme as a basis of medical practice in this country, which will prove so complicated yet so free from gross defects that further amendments will be difficult to bring about. But this may not satisfy the ambitions of those seeking to improve the health of the nation, or the needs of the public or the aspirations of the medical profession. This danger could be largely overcome if small-scale experiments were carried out, and our future plans based on the experience so obtained. The diverse needs of localities of different types cannot be too strongly emphasised. This article refers only to poor, industrial and overcrowded areas, and its purpose is to outline an experimental scheme which could be introduced now in such areas when the medical services available do not satisfy civilian needs or where the pre-war organisation of practice has become dislocated. This might be to the advantage of public and practitioner alike, and could at present cause no real hardship to any. The arrangements would be temporary and capable of amendment. The results would be of greater value than many days given over to deliberation.

I suggest a unit population of about 10,000. The responsible authority for the scheme might be the General Medical Council, who would be given the necessary legal privileges, and would act through an ad-hoc committee with perhaps some coöpted members. This would make it unnecessary to set up a newly constituted body. The administration of the scheme would rest on the registrar, or on a clerk to the committee. In order to facilitate control by the central body I would recommend that an inspectorate of three persons, one with legal training and outlook, one with experience of general practice and the third the local medical officer of health, be formed. Its duties would be to report on the work, and be a first court for hearing complaints. It should have full authority in small matters, subject to the general directions of the committee, but the senior practitioners in the scheme should have the right of appeal to the committee on matters of greater moment.

The service would be housed in premises provided, which for convenience I will call a local clinic, and would be under the general direction of a practitioner of experience assisted by two other practitioners also of ability and standing. Each of these three men would be responsible for medical work undertaken by each although under the administrative direction of the senior, and all work undertaken in connexion with the clinic would be under the supervision of one or other of them. Members of the public would have as far as reasonably possible a free choice between them. Further assistants would be attached to the clinic according to need; some of these would be newly qualified and some of an intermediate status. All patients' records would be interavailable within the group, and some degree of specialisation, according to the interests and qualifications of the staff, particularly of those of the intermediate status, should be allowed. The work of the clinic could be divided under the following heads:

Panel.—All insured persons living in the area would be transferred to the local clinic, and when necessary compensation would be paid to those doctors deprived of these patients. Fees payable from the insurance committees would be paid into the scheme. Aggrieved panel patients might on application be allowed to transfer to other doctors not in the area. The ordinary domiciliary and surgery practice would be followed for this group.

Social welfare.—The clinic would undertake all the functions of a district medical officer in regard to the area and the salary attached to this office would be paid into the scheme by the Social Welfare Committee.

Public health.—The medical officers of the clinic would act as assistants to the MOH and carry out such duties in their district as immunisation, control of infectious disease, scabies, &c. For some of these duties they might be required to attend at centres outside their area. They would work under the direction and control of the MOH, and in respect of this work the sanitary authority would contribute financially.

Maternity and child welfare and school medical service.—Much of the routine medical work of these services would then be undertaken at or in relation to the clinic. The work would be under the direction of the medical officers of the respective authority, who would also contribute to the scheme.

Factory medical supervision.—Similarly some of this work might be undertaken by the group and contributions made for this by the employers or the Ministry of Labour.

Hospital work.—Charge of beds in the local municipal hospital should be given to the clinic and its staff might also be required to undertake other hospital duties, such as anæsthetist, assistant medical officer or specialist. These duties would be according to the qualifications and experience of the men and would be under the hospital authority.

The director of the clinic would be called on to present a report each year and at other times as required on the work undertaken under each of these heads to the respective authority in duplicate. Such authority would then be required to submit one copy with its comments to the central authority. The central body would consider these after their submission to the local inspectorate together with its report on the work and organisation of the scheme. In addition to the work described, so-called private practice might be allowed and encouraged. Prescribed fees would be charged, which would be reduced on request according to an approved income scale; a proportion might be retained by the doctor. The system could be readily strengthened by the provision of a specialist service working in close coöperation. The specialist would serve the clinic through a nearby hospital or health centre and would when necessary attend at the local clinic or visit in the area. Provision would also be made for ready hospital admission and for the setting up in the clinic or close at hand of a medical auxiliary service. Charges would be made as thought fit for these services. In his reports the medical director would be required to record the operation of such ancillary services, which would be part and parcel of the scheme.

Apart from the medical staff already referred to, further lay assistants would be needed. These would fall generally into the following categories but where part-time assistance only was required one person might serve in two or more categories.

1. Steward, with responsibilities to the medical director of dealing with administrative and financial matters and for the supervision of non-professional assistants.
2. Almoner, who would deal with charges to be made to patients and the coördination of all social services that could be of assistance in the work of the clinic.
3. Clerk, to undertake filing of non-confidential notes, and clerical work generally.
4. Receptionist, to arrange appointments for patients when possible and to assist in their distribution between the staff.
5. Nurse, to help patients undress, undertake minor dressings and assist with more serious cases. This work could usefully be combined with that of a district nurse.
6. Sanitary inspector and health visitor to carry out some or all of their normal work under the supervision of the MO in his capacity as assistant MOH.
7. Other medical auxiliaries such as midwives, masseuses, dispensers, dentists, &c., according to circumstances and need.

I believe an experiment on these lines could be successfully carried out in certain areas now. It would cause very little or no serious hardship, since compensation would be paid now or at the end of the war, and the demand for doctors is great and practice is already dislocated. The national charge would be very slight when distributed over the whole country, and after deduction of the various sources of income referred to. It would be economical of medical man-power. The necessary legal provisions could be easily enacted under the Emergency Powers Act in any area where the medical service has already been or is likely to be dislocated.

The results of the experiment would be of great value in postwar medical planning, and if found successful might serve as a basis for building future schemes. The scheme, however, would be quite unsuitable except in an area of the particular type described.

EDUCATIONAL FILMS FROM RUSSIA

A SHOW of Soviet films, sponsored jointly by the Society for Cultural Relations with the USSR and the Association of Scientific Workers, was held on Sept. 12 at the Imperial Institute. Mr. Arthur Elton, who presided, remarked that in England our scientific films, many of which are very good, are produced in a haphazard way and rarely presented to the public; whereas in Russia producers of scientific films get every encouragement, in order that the whole community may benefit from this form of education.

The films shown were introduced by Dr. Martin Ruhemann, who has worked in Kharkov on low-temperature research. In Russia, he said, a public interest in science is maintained by plenty of cheap scientific and technical books and scientific articles in the newspapers which assume a high level of general scientific knowledge in the reader. He had lately been asking young workers in this country how the commoner machines work, and had been struck by their ignorance of the principles of motors, dynamos, and turbines. They cannot do their jobs as well as possible if they lack basic scientific education.

The first part of the film programme included short sequences from the Soviet film magazine, *Science and Technique* for 1940. These films illustrated novelties in Soviet scientific discovery or technical practice. Thus "Drops of Water" showed examples of surface tension, "Artificial Fledgling" illustrated a device for studying bird dietary, "Artificial Precious Stones" showed how industrial jewels are produced, "Metallisation" dealt with metal spraying, "The Hydro-Screen" demonstrated a device for reducing heat-stress in forging metals, and "Blood and Air" showed the effect of energy-expenditure on blood circulation. "The Treatment of Shock" was based on Prof. Lena Stern's method of intrathecal injection, and explained diagrammatically the hæmato-encephalic barrier.

The final film illustrated Prof. Bryukhonenko's experiments on revival by means of an artificial circulatory system termed the "autojector." This apparatus oxygenates blood and can keep an animal's circulation going by means of synchronised arterial and venous pumps. In the first example a dog's head was completely severed from its body and the blood-vessels connected by cannulæ to the autojector. The metabolism of the head was preserved with full reflex function. Normal responses were obtained to visual, auditory, tactile and other stimuli; for example, when citric acid was put on the animal's nose, its tongue licked it off and its face made the appropriate grimaces. In the second experiment an anæsthetised dog (this time with body attached) was drained of all its blood so that the heart and lungs stopped working and the animal died. After ten minutes of death the circulation was reinstated by means of the autojector. A few minutes later, when the dog's spontaneous heart-beat and respiration had been restored, the autojector was disconnected. The dog on recovering from the anæsthetic appeared unharmed. Dogs who have died for 15 minutes and have been revived in this way are still alive and healthy several years later. Conceivably this technique, at present in the early experimental stage, may develop into a new treatment for anæsthetic deaths, electric shock, and similar conditions of "reversible death." If circulation with oxygenated blood was maintained vital tissues, especially medulla and heart muscle, might be kept in a viable state during the critical first 15 minutes of death, and the patient might be tided over until heart and lungs recovered their own function. The recent strides in blood-transfusion technique make this development in resuscitation less far-fetched than might at first appear. This film, with an English commentary by Prof. J. B. S. Haldane, was technically well produced and the details of the circulation were explained by unusually clear animated diagrams to make it intelligible to lay audiences.

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as an indication that they are necessarily available for export.

INFECTIOUS DISEASES IN GERMANY

THE *Reichs-Gesundheitsblatt* for May 20, 1942, gives the following incidences of infectious diseases in Germany for the period Jan. 1 to April 25.

	1942	*1941*
Diphtheria	76,393	51,241
Scarlet fever	122,291	66,321
Whooping-cough	18,951	38,851
Tuberculosis	44,568	41,636
Cerebrospinal fever	1204	2319
Encephalitis lethargica	148	238
Poliomyelitis	296	199
Trachoma	2420	2643
Typhoid fever	1723	1641
Paratyphoid fever	494	803
Dysentery	1251	1558
Bacterial food-poisoning	466	484
Weil's disease	5	14
Puerperal fever	1356	1544
Anthrax	14	12
Dog bites (mad or suspected mad)	244	290
Psittacosis	1	16
Bang's disease	88	68
Malaria	51	122

From Ostrow Lampert reports (*Disch. med. Wschr.* 1942, **68**, 521) a fatality of 13·8% in 221 cases of typhus. Since the introduction of systematic therapy, by hot baths and infusions of artificial blood, Ringer's solution or fresh convalescent blood (100–150 c.cm. without citrate), there have been no deaths in the 104 cases. The fatality was confined to the unvaccinated cases of cerebral typhus; there were no deaths among vaccinated cerebral cases, intestinal cases or those of mixed type.

University of Leeds

At recent examinations the following were successful:

MD.—F. R. Staub.

FINAL EXAMINATION FOR MB, ChB

Part II (old regulations).—Mildred S. Airey, T. E. Bairstow, L. Crawford, C. B. Dawson, Joan A. Dawson, Mary D. Fox, Elspeth Harrison, E. B. Harrison, Kathleen M. Harrison, G. Hipps, H. M. Kershaw, T. G. Kletz, R. E. Lawrence, G. K. Laxton, D. H. Lewis, Lilias J. G. McLeod, H. B. Peart, J. Priceman, J. D. Riley, P. A. H. Rivett, Betty Sanderson, K. A. Simpson, R. Spink, C. Stringfellow, J. W. Taylor and Pauline Wynne.

Medical Casualties

The following casualties have been announced:

Wounded.—T/Surgeon Lieutenant D. V. Stott, MB LOND, RNVR, HMS *Berkeley*.

Prisoners of War.—Captain Derrick Foskett, MB CAMB, RAMC, and Captain R. G. Main, MB ABERD, RAMC.

Medical Research Council

Prof. David Keilin, FRS, and Sir Henry Dale, PRS, have been appointed members of the council in succession to Prof. L. J. Witts, and Prof. C. R. Harington, who retire on Sept. 30. Sir Charles Glen MacAndrew, MP, has also been appointed a member in succession to Mr. James Stuart, MP.

Imperial Cancer Research Fund

Two lectures will be given at the Royal College of Surgeons, Lincoln's Inn Fields, London, W.C.2, by members of the scientific staff of the fund. On Thursday, Oct. 1, at 3.30 PM Dr. B. D. Pullinger will speak on experimental tumours and trauma, and at the same time on Oct. 8, Mr. R. J. Ludford, DSc, will speak on malignant growths in tissue culture.

Rehabilitation Centre for Scotland

Arrangements are being worked out between the Department of Health for Scotland and the Ministry of Fuel to see how much accommodation can be provided at Gleneagles Hospital for the rehabilitation of miners and other industrial workers.

Medical Defence Union

At the annual general meeting on Sept. 15 Dr. James Fenton was re-elected president, Mr. E. D. D. Davis treasurer, and Dr. G. Roche Lynch was elected chairman of the council committee. During the year the representative character of the council has been enhanced by the appointment as vice-presidents of Sir Hugh Lett, Mr. W. C. W. Nixon, Dr. John Taylor and Dr. Neville Stafford, the attachment of a full-time coroner being new in the experience of the union, which now has over 25,000 members.

Lectures on Dermatology

The following lectures on common skin diseases are to be held at the London School of Dermatology, 5, Lisle Street, W.C.2, at 4.30 PM on Tuesdays and Thursdays: Sept. 29, Dr. Henry Corsi, scabies and parasitic infections; Oct. 1, Dr. William Griffith, bullous eruptions; Oct. 6, Dr. R. T. Brain, ringworm infections; Oct. 8, Dr. J. E. M. Wigley, general principles of treatment; Oct. 13, Dr. A. D. Porter, eczema; and Oct. 20, Dr. Geoffrey Duckworth, seborrhœic dermatitis and psoriasis.

The lectures are free and open to medical officers of all the Allied Forces, postgraduates and undergraduates.

London County Council

For the duration of the war St. Peter's Hospital, Whitechapel, and St. Luke's Hospital, Chelsea, have been transferred from group I of the council's hospitals, which receive the acute sick, to group II which receive the chronic sick.

Hospitals in the North-east

By arrangement with the Minister of Health, the Nuffield Provincial Hospitals Trust has appointed Prof. J. A. Ryle, FRCP and Dr. A. E. Quine, FRCS, to carry out a survey of hospital services in the north-east of England (Northumberland, Durham and Cleveland). This survey will be conducted on the same lines as the surveys now being carried out by officers appointed by the Minister of Health in the London area and in the north-west. This is part of an arrangement under which the Nuffield Trust, with the concurrence of the County Councils Association, the Association of Municipal Corporations and the British Hospitals Association, has undertaken to assist the ministry by organising surveys of hospital services in various parts of the country. The areas to be surveyed and the officers to be appointed will be agreed between the minister and the trust.

Registrar for Forty Years

Mr. Robert Brough, registrar of the general council of the University of Glasgow and acting secretary of the university court, retired at the end of July after almost forty years' service. The council are organising a testimonial to him which many Glasgow graduates will wish to join. Subscriptions—which are limited to 5*s.*—should be sent to the clerk of the council at 82, West Regent Street, Glasgow, C.2.

Chiropodists Wanted for ATS

The care of the feet is an important part of the medical services of the ATS, and foot complaints sometimes occur within the first few weeks of enrolment, probably because most women entering the service have been used to wearing high-heeled light-weight shoes. These women show symptoms of metatarsalgia, early foot strain, tendo Achillis bursitis and so forth, and an appeal is now being made to women chiropodists up to the age of 43 (50 for ex-Service women) to enrol in the ATS. They will be sent to a basic training centre for one month, and afterwards posted, with the rank of corporal, to ATS groups or training centres. They will be paid at the rate of 4*s.* 6*d.* a day—the highest trade rate for an ATS corporal. On being posted to a company, in view of the specialised nature of their work, they will not be expected to undertake some of the more arduous duties which fall to the lot of an NCO. All chiropodists work under the direction of a medical officer, and cases which do not respond to treatment are referred to an orthopædic surgeon in a hospital. It is intended to have a corporal chiropodist for every 600 auxiliaries. Some of them will be stationed in training centres and mixed batteries, others will travel from one company to another in order that regular inspections may be given.

Nursing Policy in West Africa

Mr. Harold Macmillan, under-secretary for the Colonies, replying to a question in the House of Commons stated the declared policy of the Government that there should be no discrimination on the ground of colour in filling appointments in West Africa. The Secretary of State attaches importance to the increased employment of colonial men and women in their own countries provided that they are suitably qualified not only by professional attainment but also by personality and character. To ensure that these requirements are met, candidates for the Colonial Nursing Service, whatever their origin, are interviewed by the Overseas Nursing Association on behalf of the Secretary of State, and appointed or rejected on its report. In order that the present satisfactory status of that Service may be maintained, it is of importance that there should be no lowering of the standards which have been applied in the past and they must be applied to all races without discrimination, even though this may seem to bear hardly on candidates who may not have enjoyed the same educational or cultural advantages as others, but it is to be remembered that candidates selected for the Colonial Nursing Service are often required to carry out, even in their first year of service, duties in regard to hospital supervision and training of subordinate staff which here would only be expected of matrons or sister tutors with long nursing experience. Consideration is being given in the formulation of postwar plans to schemes providing Government assistance for sending selected girls to this country to train as nurses, but the number who can thus be accommodated is limited by the number of vacancies which can be made available in teaching hospitals for overseas candidates. While this scholarship scheme may help, it cannot possibly provide nurses on the scale requisite for the proper staffing of colonial hospitals and health departments, and it is essential to arrange for training facilities as nurses for girls in their own countries and to supply sister tutors trained in the teaching methods and discipline common to hospitals here. After qualification colonial nurses who had been specially selected for ability and character, could then be brought to this country for special courses, and plans are in hand for improving after the war the facilities for providing such courses.

Births, Marriages and Deaths

BIRTHS

DUFFY.—On Sept. 12, at Stourport-on-Severn, the wife of Captain C. A. Gavan Duffy, RAMC—a son.

FRESHMAN.—On Sept. 15, at Wingham, Nr. Canterbury, the wife of Edgar Freshman, FRCS—a daughter.

HEWITT.—On Sept. 14, at Radlett, Herts, the wife of Major E. J. C. Hewitt, RAMC—a daughter.

LACK.—On Sept. 11, at West Cross, Swansea, the wife of Captain Christofer Lack, RAMC—a daughter.

PARISH.—On Sept. 14, at Southborough, the wife of Dr. T. N. Parish—a son.

SQUIRE.—On Sept. 15, in London, the wife of Dr. Christopher Squire—a son.

TOWNSLEY.—On Sept. 13, at Norwich, the wife of Norman Townsley, FRCS—a daughter.

WAYMOUTH.—On Sept. 14, at Harrow-on-the-Hill, the wife of Captain Arthur Waymouth, RAMC—a daughter.

MARRIAGES

ADAM—FORSYTH.—On Sept. 19, in Edinburgh, Patrick Alan Adam, surgeon lieutenant RNVR, to Isabel Jean Forsyth.

GRANGER—ELLIS.—On Sept. 12, at Kimbolton, Allan Frederic Granger, captain RAMC, to Phyllis Mary Ellis.

GREGG—WILKINSON.—On Sept. 12, in London, Duncan McCallum Gregg to Audrey Ann Wilkinson.

HAY—OLIVER.—On Sept. 11, at Newcastle-on-Tyne, Rankin Kilgour Hay, MB, to Winifred Oliver, SRN.

HORTON—JENKINS.—On Sept. 14, at Belmont, John Anthony Guy Horton, MB, to Margaret Jenkins.

DEATHS

BRIERLEY.—On Sept. 11, at Kitamaiyu, Ruiru, Kenya Colony, Wilfred Edward Brierley, MB MANC and LEEDS, FRCS, lieut.-colonel IMS (retd.).

CHATER.—On Sept. 17, at Petersfield, Harold John Chater, MRCS, surgeon rear-admiral RN (retd.), aged 68.

COTES-PREEDY.—On Sept. 16, at Gerrards Cross, Digby Cotes-Preedy, LSA, KC.

GELL.—On Sept. 14, at Church Aston Manor, Henry Willingham Gell, OBE, BM OXFD, aged 85.

GRIMMER.—On Sept. 16, George Kerr Grimmer, BA NEW BRUNSWICK, MD EDIN, FRCSE, of Trinity Crescent, London, S.W.12, aged 76.

LLOYD JONES.—On Sept. 16, Ernest Lloyd Jones, MD CAMB, formerly of Cambridge, aged 79.

MOODY.—On or about Sept. 11, at Umvuma, Southern Rhodesia, John Evelyn Moody, LMSSA, formerly of Scarborough, aged 61.

PHILLIPS.—On Sept. 11, at Farringdon, Hants, Alfred Stanbury Phillips, MRCS, formerly of Bedford.

PLUMPTRE.—On Sept. 14, at Cheltenham, Cyril Macdonald Plumptre, FRCSE, FRCOG, lieut.-colonel IMS (retd.), of Wendover.

RENDEL.—On Sept. 13, at Godalming, Frances Elinor Rendel, MB LOND.

WRIGHT.—On Sept. 9, at Liverpool, Hedley Duncan Wright, BA TASMANIA, MD, DSC. EDIN, MRCPE, professor of bacteriology in the University of Liverpool.

The Index and title-page to THE LANCET, Vol. I, 1942, which was completed with the issue of June 27, will be ready shortly. A copy will be sent gratis to subscribers on receipt of a post card addressed to the Manager, 7, Adam Street, Adelphi, W.C.2. Subscribers who have not already indicated their desire to receive indexes regularly as published should do so now.

'Berin' in increased metabolism...

Vitamin B_1 (Berin), is needed most whenever there is an increase of metabolism. The most active organs exert the greatest call, for vitamin B_1 is required to complete the oxidation of carbohydrates.

Whether the increased metabolism is due to readjustments of the "internal milieu" as in fever, pregnancy and during growth, or whether external conditions force an extra burden upon the body as a whole, due to increased physical effort and longer hours of work, provision should be made for good supplies of vitamin B_1. Alternatively, a look-out should be kept for evidence of the toxic effect that results from the accumulation of products of incomplete carbohydrate metabolism.

Fatigue in industry is to be approached not only as a problem of motion in a rhythm of rest and action, but also as a nutritional problem involving breaks for food and the provision of the essential factors needed to bring the fullest nourishment therefrom.

'Berin' the Glaxo product of aneurine hydrochloride provides 320 international units per 1 mg. tablet.

BERIN BRAND

Glaxo preparation of vitamin B_1 (aneurine hydrochloride B.P.). Available in 1 mg. and 3 mg. tablets for oral therapy; 1 cc. ampoules for injection, containing 5 mg. and 25 mg.

PRODUCT OF THE GLAXO LABORATORIES

Manufactured by GLAXO LABORATORIES LTD., at GREENFORD, MIDDLESEX. BYRon 3434

There is no respite for ADEXOLIN

Although 'Adexolin' is widely prescribed as a protective measure against seasonal infections, there yet remain a number of states (some of which are detailed below), common to all seasons, where this supplement of vitamins A and D is unmistakably indicated. 'Adexolin' has the advantages of being standardised, rational in A-to-D balance, convenient, and acceptable to the patient.

Barrier against infection

With an autumn and winter of sustained war-effort ahead, the need is to build up a stout resistance to infection in advance. A course of 'Adexolin' may well be an essential measure, particularly against those change-of-season infections which predispose to more serious illness. One 'Adexolin' Capsule daily is an effective prophylactic routine.

Pregnancy and Lactation

'Adexolin' equips the mother to meet the strain of lactation; and helps to mobilise calcium for the growth of the fœtus. The routine is one 'Adexolin' Capsule a day.

Routine for Infants

'Adexolin' Liquid gives powerful help to normal growth, to dental and skeletal development and to resistance against infection. It can be given unnoticed in the bottle feed, or on the infant's tongue.

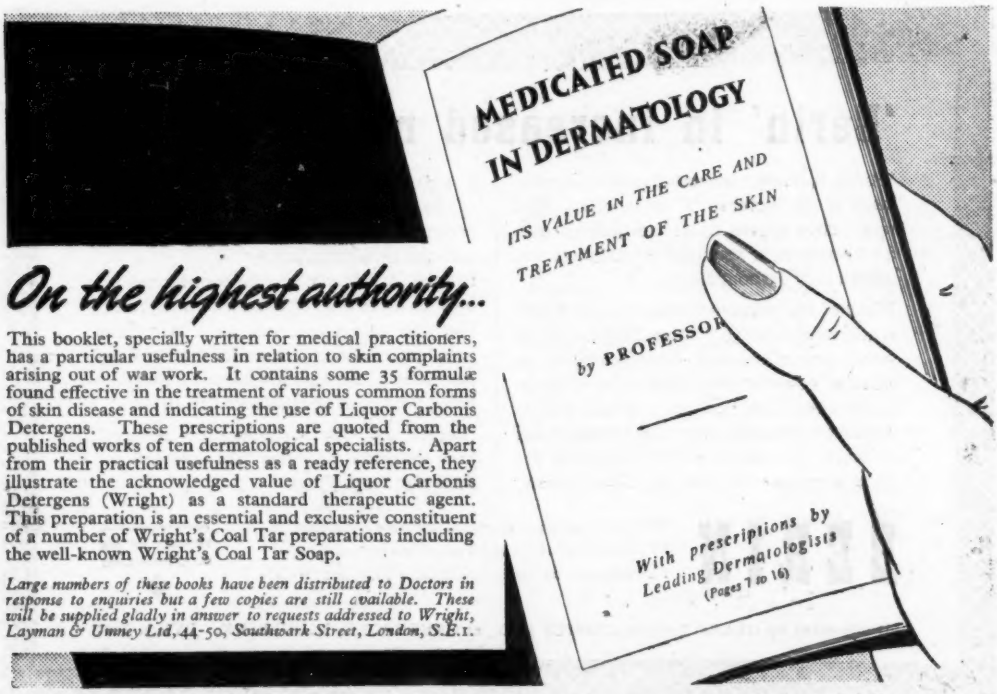
Adjunct to Specific Treatment

'Adexolin,' by instituting a nutritional attack upon infection, is of great value as an adjunct in the treatment of gastro intestinal, nephritic and metabolic disorders; hypovitaminosis incidental to restrictive diet therapy; febrile illnesses; debility; and convalescence.

Each 3 minim Adexolin Capsule contains 4,500 i. u. vitamin A, and 900 of D. Each cc. of Adexolin Liquid contains 12,000 i. u. vitamin A and 2,000 of D.

ADEXOLIN

Glaxo Laboratories Ltd.
Greenford, Middlesex.
BYRon 3434



On the highest authority...

This booklet, specially written for medical practitioners, has a particular usefulness in relation to skin complaints arising out of war work. It contains some 35 formulæ found effective in the treatment of various common forms of skin disease and indicating the use of Liquor Carbonis Detergens. These prescriptions are quoted from the published works of ten dermatological specialists. Apart from their practical usefulness as a ready reference, they illustrate the acknowledged value of Liquor Carbonis Detergens (Wright) as a standard therapeutic agent. This preparation is an essential and exclusive constituent of a number of Wright's Coal Tar preparations including the well-known Wright's Coal Tar Soap.

Large numbers of these books have been distributed to Doctors in response to enquiries but a few copies are still available. These will be supplied gladly in answer to requests addressed to Wright, Layman & Umney Ltd, 44-50, Southwark Street, London, S.E.1.

Useful & tempting, in cases where biscuits may be taken –

McVITIE & PRICE'S

DIGESTIVE BISCUITS

MADE FROM DAIRY-FRESH BUTTER AND WHOLESOME BRITISH WHEAT

YOUR WILL

If you appoint the Westminster Bank as your Executor, your estate has the benefits of

a) A trained staff to deal with difficulties.

b) An administration which cannot be biased.

c) Officials who may be consulted at any reasonable hour, and are pledged to secrecy.

d) Immense resources behind your Trust.

A booklet entitled 'Wills, Trusts, and Settlements' showing the terms of appointment may be obtained on application at any branch of the Bank.

WESTMINSTER BANK
LIMITED
Head Office: 41 Lothbury, E.C.2

"BELLING" ELECTRIC BED WARMER

For Hospitals, Nursing Homes and Domestic Use. Now available in only one finish—Copper Bronze. Consumes no more electricity than a small lamp, and can be used from any lampholder or socket. Absolutely safe—no trouble—no filling — no leaking. Warms and thoroughly airs the whole bed. Can be left on indefinitely and drives out all moisture from sheets, blankets and mattress. Supplied complete with indicating light and flexible. Used and recommended by the medical profession. Write for special leaflet.

Pre-war price	24/-
War increase (33⅓%)	8/-
Purchase Tax	8/-
To-day's price	£2.0.0

"BELLING" CHAMPION HEATER

Ideal for Hospitals, Nursing Homes, Sick Rooms, etc. Warm air is circulated to every corner at such a velocity that the air is kept moving, thus assisting ventilation and preventing stagnation. No oxygen is used up and it is absolutely safe. Made in three sizes and easily portable.

List Prices

No. 81a. Uses ½ or ¼ units per hour	£2.2.8
No. 82a. Uses 1½ or ¾ units per hour	£2.10.0
No. 83a. Uses 2¼, 1½ or ¾ units per hour ..	£3.13.4

Complete with control switches and illuminated bases.

Purchase Tax 25% Extra

'Belling'
Write for catalogue.

BELLING & CO., LTD., Bridge Works, Enfield, Middlesex

o.a.c.3856

Methods of Stimulating the Metabolic Rate

There are three methods of stimulating the metabolic rate in patients suffering from depressed metabolism:

1. **The injection of thyroxin intravenously.**
2. **The administration of thyroid or other compounds of the nitro-phenol group by mouth.**
3. **The prescription of foods such as broths, meat extracts, etc.**

SINCE the first two methods involve considerable interference with the normal mechanism of the body, practitioners usually prefer the third method.

If will therefore be of interest to them to know that one well-known meat preparation is outstandingly effective in stimulating the metabolic rate. It is Brand's Essence.

After the ingestion of Brand's Essence, there is a sharp increase in the heat output, reaching a peak after half an hour, and still appreciable six hours later.

Doctors can therefore prescribe Brand's Essence with confidence in cases of depressed metabolism. It will be found of special convenience in those cases in which the patient cannot tolerate sufficient protein.

Brand's Essence is still sold at pre-war prices.

BRAND'S ESSENCE

For DEAFNESS

DOCTORS RECOMMEND

'ARDENTE'

because—

there is a very wide range of types from non-electrical to the very latest midget-valve types to ensure suitable fitting after Audiometer Test and an organisation which, in spite of the war, is still able to offer an adequate after-fitting service in all parts of the country

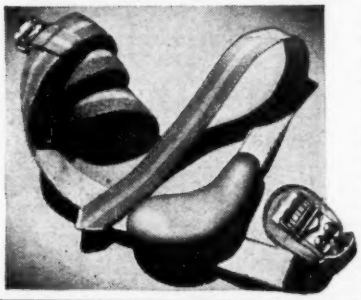
Mr. R. H. DENT, M.Inst.P.I., ARDENTE Ltd.
309 OXFORD STREET, LONDON, W.1
Phones: MAYfair 1380-1718-0947
Birmingham, Bristol, Cardiff, Edinburgh, Glasgow, Leeds, Leicester, Manchester, Newcastle

MICROSCOPES AND ACCESSORIES
WANTED HIGHEST PRICES GIVEN
Write, call or 'phone
DOLLONDS *(Dept. L)*
281, OXFORD STREET, LONDON, W.1
Tel.: Mayfair 0859

A. SHAW, Medical Transfer Agency
PREMIER BUILDINGS, 88, CHURCH ST., LIVERPOOL 1
Telephone: Royal 8116 & 7480 Telegrams: "Organic," Liverpool

Practices and Partnerships for Sale
Lancs., N. Wales, Yorks., S. Wales, etc.
Locums and Assistants supplied
All classes of Insurance transacted

Not without reason *are more and more doctors recommending the Brooks Rupture Appliance.*



For the first time we are able to offer our clients a *hand-made pad* having the automatic air feature. It takes in and exhausts air with every movement of the body. It is a special and exclusive Brooks design. Previously pads of this type were usually stuffed with curled hair, felt or some other substance of that kind. These new cushions are moulded and covered by hand with special fine quality water-proof cloth.

An increasing number of medical men and women are forming the opinion that the Brooks Automatic Air Cushion Pad is the best possible mechanical device for retaining hernia. Being automatic, it follows every movement of the body, giving security under all conditions—yet without the "gouging" pressure associated with rigid-type pads. Once adjusted, it will not easily slip or leave its proper position.

It is for these reasons, and because every Brooks Appliance is specially made to individual measurements by skilled and highly trained fitters, that we co-operate in so many hernia cases. May we send you full particulars?

Brooks Appliance Co. Ltd.,
(517Y) 80, Chancery Lane, London, W.C.2.
Telephone : HOLBORN 4813
(517Y) Hilton Chambers, Hilton St., Stevenson Sq., Manchester, 1 *Telephone : CENTRAL 5031*

ALUZYME NON-AUTOLYSED YEAST

By far the richest source of the entire Vitamin B Complex. B_1 : 1140 I.U. per oz. (Official Assay) with all other factors. Vehicle of choice for oral administration in all Vitamin B deficiency conditions. Guarantees of potency and constancy of action and samples, on request from

ALUZYME PRODUCTS, Park Royal Rd., London, N.W.10

MICROSCOPES WANTED

for Important Scientific and Research Work

Complete and elaborate outfits up to £500 particularly required
Highest possible prices paid Prompt cash

High prices also paid for LEICAS, CONTAXES and similar miniature cameras

WALLACE HEATON LTD., 127, New Bond Street, London, W.1

BRITISH POSTGRADUATE MEDICAL SCHOOL
(UNIVERSITY OF LONDON)

THE SURGICAL CARE OF THE SOLDIER IN TRAINING
5th to 9th October, 1942

Monday, 5th Oct.	10 A.M.	Abdominal Emergencies ..	Surg. Rear-Admiral Gordon-Taylor, O.B.E., M.S., F.R.C.S.
	2 P.M.	Hernia and its Management.	Lieut.-Colonel d'Abreu, F.R.C.S.
	3 P.M.	Strangulated Hernia ..	Mr. R. H. Franklin, F.R.C.S.
Tuesday, 6th Oct.	10 A.M.	Genito-urinary Problems..	Mr. Clifford Morson, C.B.E., F.R.C.S.
	12.15 P.M.	Genito-urinary Instruments and Their Care.	Mr. Clifford Morson, C.B.E., F.R.C.S.
	2 P.M.	Everyday Operations ..	The Surgical Staff.
Wednesday, 7th Oct.	10 A.M.	Minor Head Injuries ..	Mr. G. C. Knight, F.R.C.S.
	11 A.M.	Rectal Conditions	Mr. R. H. Franklin, F.R.C.S.
	2 P.M.	Enlarged Glands and Surface Swellings.	Professor Grey Turner, F.R.C.S.
Thursday, 8th Oct.	10 A.M.	Varicose Veins and Their Complications.	Mr. R. H. Franklin, F.R.C.S.
	11.15 A.M.	War Burns	Mr. E. E. Lewis, F.R.C.S.
	2 P.M.	Boils, Carbuncles, Cellulitis, General Sepsis.	Mr. G. C. Dorling, F.R.C.S.
Friday, 9th Oct.	10 A.M.	Foot Troubles; Sprains ..	Surg. Commander Higgins, M.B., B.Ch., B.A.C.
	2 P.M.	Demonstration at West London Hospital on Venereal Diseases.	Dr. F. C. Endean, M.R.C.S., L.R.C.P.

The fee for the Course will be one guinea, but no fee will be charged in the case of Officers of the Armed Forces who are nominated for the course by their respective Director-Generals. Applications for admission should be addressed to the DEAN, British Postgraduate Medical School, Ducane-road, W.12.

Further War Courses will commence as follows :—

WAR SURGERY OF THE ABDOMEN	MONDAY, 19TH OCTOBER.
WAR MEDICINE COURSE	MONDAY, 2ND NOVEMBER.
TREATMENT OF FRACTURES (limited to 40)	MONDAY, 16TH NOVEMBER.

L. M. S. S. A.

FINAL EXAMINATION: SURGERY, October 12th, November 9th, December 7th, 1942; MEDICINE, October 19th, November 16th, December 14th, 1942; MIDWIFERY, October 20th, November 17th, December 15th, 1942.

For regulations apply REGISTRAR, Apothecaries' Hall, Black Friars-lane, London, E.C.4.

Royal College of Surgeons of England.

GENERAL ANNUAL REPORT OF THE COUNCIL.

Owing to the necessity of economy in paper the Annual Report cannot be supplied to all those whose names were on the pre-war mailing list. This year's Report will only be sent to Fellows and Members who apply to the Secretary by the 8th October. KENNEDY CASSELS, Secretary.

Lincoln's Inn-fields, London, W.C.2,
26th September, 1942.

ROYAL EARLSWOOD INSTITUTION
REDHILL, SURREY

For MENTAL DEFECTIVES of all ages

Training under medical supervision. Schools, Farm, Trade Workshops, Recreations. Fees £125 to £375 p.a. Election by votes of subscribers at reduced terms for necessitous trainable cases.

Apply, Secretary. Tel.: Redhill 344.

THE MAGHULL HOMES FOR EPILEPTICS (Inc.)
MAGHULL, Near LIVERPOOL

Open Air Occupation and Recreation for Patients, Farming, Gardening, Football, Cricket, Tennis, Bowls, etc. School recognised by Board of Education.

FEES—1st Class (men only) .. .. from £3 per week
2nd Class (men and women) .. .. .. „ 37/6 „
3rd Class (men and women) supported by—
Public Assistance Committees .. .. „ 27/6 „
Education Committees .. .. .. „ 33/6 „
Private .. .. „ 21/- „

For further particulars apply to—
G. EDGAR GRIEWOOD, A.C.A., 90, Exchange Street East, LIVERPOOL 2

CITY OF LONDON MENTAL HOSPITAL
Near DARTFORD, KENT.

Ladies and Gentlemen received for treatment under certificates, and without certificates as either VOLUNTARY or TEMPORARY PATIENTS, at a weekly fee of £2 9s., and upwards.

SPRINGFIELD HOUSE

'Phone : BEDFORD 3417. **Near BEDFORD**

For Mental Cases with or without Certificates.

Ordinary Terms : Five Guineas per week (including Separate Bedrooms for all suitable cases without extra charge).

For forms of admission, &c., apply to the Resident Physician, CEDRIC W. BOWER.

INTERVIEWS IN LONDON BY APPOINTMENT.

Telephone : WELbeck 2722 Telegrams : "ASSISTIANO, LONDON"

For MEDICAL, SURGICAL, and

MENTAL NURSES

Male or Female

THE NURSES' ASSOCIATION

In conjunction with the MALE NURSES' ASSN.

29, YORK ST., BAKER ST., LONDON, W.1

Mrs. MILLICENT HICKS, *Superintendent* W. J. HICKS, *Secretary*

CRICHTON ROYAL, DUMFRIES FOR NERVOUS AND MENTAL DISORDERS

Cases of Alcoholism and Drug Addiction are admitted. Every facility for individual treatment on the most modern lines. **Special Department for Insulin Therapy.** Fully equipped Gymnasium, Golf Course, and Indoor Swimming Pool. Specially trained Occupational and Recreational Therapists.

Medical Certificates given anywhere in the British Isles are valid for admission of patients.

Physician Superintendent: P. K. McCOWAN, J.P., M.D., F.R.C.P., D.P.M., Barrister-at-Law. Telephone: Dumfries 1119.

THE OLD MANOR, SALISBURY

Telephone: 3216 & 3217

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS

Extensive grounds. Detached Villas. Chapel. Garden Produce from own gardens. Terms very moderate.

CONVALESCENT HOME AT BOURNEMOUTH

standing in 12 acres of ornamental grounds, with separate villas, tennis courts, etc. Patients or Boarders may visit the Home by arrangement.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury.

VALE OF CLWYD SANATORIUM

This Sanatorium is established for the treatment of Tuberculosis of the Lungs and the Pleural Cavities. It is situated in the midst of a large area of park-land at a height of 450 feet above sea-level. Average rainfall 29·57 per annum. Full day and night Nursing Staffs. X-ray plant. Every facility for Artificial Pneumothorax and for operations on the Chest. Electric Lighting. Central Heating.

For particulars apply to Medical Superintendent.

H. MORRISTON DAVIES, M.D., M.Ch. (Cantab.), F.R.C.S., Llanbedr Hall Ruthin, N. Wales.

RUTHIN CASTLE, NORTH WALES

A Private Clinic, the first in Great Britain, for investigation and treatment of all forms of disease, except infectious and mental

There is a steel and concrete Air Raid Shelter with heating and a lift to all floors

Inclusive charges — Apply SECRETARY — Telephone: Ruthin 66

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5

Telegrams: "PSYCHOLIA, LONDON" — FOR THE TREATMENT OF MENTAL DISORDERS — *Telephone:* RODNEY 4242 (2 lines)

Completely detached Villas for mild cases. Voluntary Patients received. Twenty acres of grounds; own garden produce. Hard and grass tennis courts, putting greens, Recreation Hall with Badminton Court, and all indoor amusements. Occupational therapy, Calisthenics, Actino-therapy, prolonged immersion baths, shock and also modified insulin treatment. Chapel.

Senior Physician, Dr. HUBERT JAMES NORMAN, assisted by a resident Medical Staff and visiting Consultants. An Illustrated Prospectus giving fees, which are strictly moderate, may be obtained upon application to the Secretary

The Convalescent Branch is HOVE VILLA, BRIGHTON, and is 200 ft. above sea-level

COURT HALL, KENTON, near EXETER

FOR THE TREATMENT OF EIGHT LADIES, VOLUNTARY, TEMPORARY AND CERTIFIED PATIENTS

CLIFFDEN, TEIGNMOUTH

FOR EARLY AND CONVALESCENT CASES. Recreational Therapies are held daily by skilled Leaders

The house stands high with spacious balconies and extensive views of the South Devon Coast. Beautiful garden. Own Dairy in 25 acres. Private road to beach. There is also a charming house, **EBWORTHY, MANATON, DARTMOOR,** situated in 20 acres, 1100 ft. up for bracing moorland air

Resident Physicians—BERTHA M. MULES, M.D., B.S. ANNE S. MULES, M.R.C.S., L.R.C.P. *Telephones*—STARCROSS 259 and TEIGNMOUTH 289

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15

Telegrams: "Alleviated, London" — **Telephone: Rodney 2641-2642**

A Private Mental Hospital, for Ladies and Gentlemen suffering from Nervous and Mental Illness, where the amenities of a comfortable home are combined with full investigation and every well-established modern treatment.

Terms from 3½ guineas weekly.

Illustrated Prospectus may be obtained from the Physician Superintendent.

THE LAW NURSING HOME

ROCHDALE (Lancs)

Founder: The late SIR A. J. LAW, J.P., M.P.

A Private Hospital, exclusively for the treatment of POST-ENCEPHALITIC PARKINSONISM, PARKINSON'S DISEASE and ALLIED DISORDERS

The Nursing Home is governed by Trustees; any surplus is utilized to help patients who cannot afford full fees. Extensive grounds. Hydro. Expert Massage and Physical re-education. Dietary treatment. Equipped with every laboratory apparatus for the investigation and treatment of the diseases. Results of the BULGARIAN TREATMENT published (Lancet, 1939, I, 693) approx.: 300 patients treated in the last 3 years. Terms moderate. Further particulars apply Medical Superintendent. Tel.: Rochdale 2960.

THE CASSEL HOSPITAL FOR FUNCTIONAL NERVOUS DISORDERS

new address: ASH HALL, BUCKNALL, near STOKE-on-TRENT, STAFFS *Telephone:* ASH BANK 218

Temporarily removed from Sweylands, Penshurst, Kent, to above country house about five miles from Stoke in the direction of Ashbourne.

The Hospital will continue to admit for treatment patients of moderate means suffering from psychoneurotic illnesses.

Patients suffering from psychotic illnesses are not eligible for admission.

Further particulars may be obtained by application to the Medical Director at the new address.

CHEADLE ROYAL CHEADLE CHESHIRE

A Registered Hospital for MENTAL DISEASES, and its Seaside Branch, GLAN-Y-DON, Colwyn Bay, N. Wales

THE object of this Hospital is to provide the most efficient means for the treatment and care of those of the Upper and Middle Classes suffering from MENTAL and NERVOUS DISEASES. The Hospital is governed by a Committee appointed by the Trustees of the Manchester Royal Infirmary. VOLUNTARY, TEMPORARY, AND CERTIFIED PATIENTS RECEIVED

For Terms and further information apply to the MEDICAL SUPERINTENDENT Telephone: GATLEY 2231

HAYDOCK LODGE,
NEWTON-LE-WILLOWS, LANCASHIRE.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES suffering from Mental and Nervous Disorders, Alcoholism and Drug Addiction, either voluntarily, temporarily, or under certificate. Patients are classified in separate buildings according to their mental condition. Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT. *Telephone:* Ashton-in-Makerfield 7311. *Telegraphic Address:* Wootton, Ashton-in-Makerfield.

THE COTSWOLD SANATORIUM

On the Cotswold Hills seven miles from Cheltenham, Stroud and Gloucester. Fully equipped for the treatment of all forms of Tuberculosis. **Terms: 5½ to 9½ guineas per week, inclusive.** Full particulars from MEDICAL SUPERINTENDENT, Cotswold Sanatorium, Cranham, Gloucester. *Telephone:* Witcombe 81. *Telegrams:* "Hoffman, Birdlip."

CHISWICK HOUSE,
PINNER, MIDDLESEX.
Telephone: PINNER 234.

A Private Hospital for the Treatment and Care of Mental and Nervous Illnesses in both Sexes.
A modern country house, 12 miles from Marble Arch, in attractive and secluded surroundings. Fees from 10 guineas per week inclusive. Cases under Certificate, Voluntary and Temporary Patients received for treatment.
DOUGLAS MACAULAY, M.D., D.P.M.

FENSTANTON at "FIVE DIAMONDS," Chalfont St. Giles, Bucks

A Private Home for the Care and Treatment of a limited number of LADIES with Mental and Nervous Disorders. Certified, Voluntary, and Temporary Patients received. Mansion with 12 acres of ground. (See *Medical Directory*, p. 2362.) Apply Resident Physician. Telephone: Little Chalfont 2046. Station: Chalfont and Latimer.

THE COPPICE, NOTTINGHAM
HOSPITAL FOR MENTAL DISEASES
President: The Right Hon. LORD BELPER

REGISTERED HOSPITAL for Voluntary, Temporary, or Certified PRIVATE PATIENTS of UPPER and MIDDLE CLASSES. Own kitchen garden. Modern forms of treatment, including Electro-shock Therapy. Out-door games, cinema visits, motor drives arranged. Visiting Chaplain.

For terms, &c., apply to: Dr. G. M. WODDIS, Medical Superintendent. Telephone: 64117 Nottingham.

MALLING PLACE, KENT

For LADIES and GENTLEMEN of Unsound Mind.

Terms moderate. Apply to Resident Medical Superintendent. Telegrams: ADAM WEST MALLING. Telephone No. 2: MALLING.

HEIGHAM HALL, NORWICH

PRIVATE MENTAL HOME for Nervous and Mental Illness. All forms of treatment available. Fees from 4 gns. per week, upwards according to requirements. Vacancies occasionally exist at reduced fees on the recommendation of the patient's own physician.

Apply to Dr. J. A. SMALL. Telephone: Norwich 20080

Examining Surgeons:
FACTORIES ACT, 1937.

The following appointment as Examining Surgeon under the Factories Act, 1937, is vacant.
Applications should be sent to the CHIEF INSPECTOR OF FACTORIES, 28, Broadway, London, S.W.1.

District	*County*	*Latest date for receipt of application*
HENDON ..	MIDDLESEX ..	6th October, 1942.

Middlesex County Council.
SPRINGFIELD MENTAL HOSPITAL, LONDON, S.W.17.

TEMPORARY ASSISTANT MEDICAL OFFICER (B1) (unestablished) required, British, Male or Female. Salary £400 per annum and all found. One month's notice on either side. Mental experience desirable but not essential. Suitably qualified R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply.
Apply at once with copies of three testimonials and stating age, experience and qualifications, to the MEDICAL SUPERINTENDENT.

UNIVERSITY EXAMINATION POSTAL INSTITUTION
17, RED LION SQUARE, LONDON, W.C.1
Over 50 years' experience

POSTAL COACHING FOR ALL MEDICAL EXAMINATIONS

MEDICAL PROSPECTUS (36 pages)
sent gratis, along with List of Tutors, &c., on application to the Principal, 17, Red Lion-square, London, W.C.1. (Telephone: HOLborn 4818.)

Middlesex County Council.

RESIDENT CASUALTY OFFICER (B1) required for REDHILL COUNTY HOSPITAL, EDGWARE, MX. Applications invited from registered medical practitioners who have held house appointments and had good all-round experience. R practitioners now holding A or B2 posts ineligible unless rejected by the R.A.M.C. Salary £350 p.a. plus war bonus. Board, lodging and laundry. Whole-time duties under Medical Superintendent include dealing with casualties and admissions to hospital and such other duties as may be required. Appointment, subject to medical examination and one month's notice is primarily for six months, but may be extended for a further six months. Post vacant mid-October.
Application, stating age, nationality, qualifications with dates, and experience, to the Medical Superintendent "B3" of Hospital. No application forms provided. Relationship to any member or officer of Council to be disclosed. Copies of not more than three recent testimonials. Canvassing directly or indirectly will disqualify. Closing date 3rd October, 1942.
C. W. RADCLIFFE, Clerk of the County Council.
Middlesex Guildhall, Westminster, S.W.1.

Royal Waterloo Hospital for Children
AND WOMEN, Waterloo-road, London, S.E.1.

Applications are invited from registered medical practitioners (Female—British) for the appointments of:—
RESIDENT HOUSE PHYSICIAN (B2), vacant on the 1st October, 1942. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41, may also apply. Salary at the rate of £200 per annum.
RESIDENT HOUSE SURGEON (A), vacant on the 18th October, 1942. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply. Salary at the rate of £150 per annum.
The appointments will be for a period of six months.
Applications, stating age, qualifications with dates, and nationality, accompanied by copies of three recent testimonials, should be sent as early as possible to—
J. H. TEASDALE, Secretary.

British Postgraduate Medical School.
(UNIVERSITY OF LONDON.)

Applications are invited from registered medical practitioners, Male and Female, for the A appointments of One HOUSE SURGEON (Obstetric) and One HOUSE SURGEON (Gynæcology), to become vacant on the 8th November, 1942, and One HOUSE SURGEON (Obstetric), vacant on 1st December, 1942. The appointments are for six months. The salary is at the rate of £105 per annum, plus full residential emoluments. Practitioners liable under the National Service Acts, 1939–41, who have not yet completed three months since date of qualification may also apply.
Applications, together with copies of three recent testimonials, should be made to the DEAN, British Postgraduate Medical School, Ducane-road, Shepherd's Bush, W.12, not later than Tuesday, 6th October, 1942.

London County Council.

Medical practitioner required for the undermentioned position. Married quarters not available.

TEMPORARY ASSISTANT MEDICAL OFFICER, Class II (B2). Salary £250, with board, lodging, and washing.

QUEEN MARY'S HOSPITAL FOR CHILDREN, Carshalton, Surrey. Duties with surgical bias.

Practitioners qualified more than three months cannot be considered unless they have been rejected by the R.A.M.C. If held by a practitioner (Male or Female) liable under the National Service Acts, 1939–41, the appointment will be limited to six months.

Application forms obtainable (stamped foolscap envelope necessary) from the MEDICAL OFFICER OF HEALTH (S.D.2), County Hall, S.E.1, returnable by 5th October, 1942. Canvassing disqualifies.

King Edward Memorial Hospital,
EALING.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of CASUALTY OFFICER AND HOUSE SURGEON (A) (Orthopædics, &c.), vacant on 1st October, 1942. Appointment will be for six months. Salary at the rate of £150 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply.

Applications, stating age, nationality, qualifications with dates, and accompanied by copies of two recent testimonials, should be sent immediately to—

R. A. MICKELWRIGHT, House Governor.

London Chest Hospital,
Victoria Park, E.2.

Vacancy for HOUSE PHYSICIAN (B2) will occur on 1st November, 1942. Six months' appointment. Salary at the rate of £150 per annum, board, residence, and laundry provided. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may also apply.

Applications, with copies of three testimonials, should be sent at once to the SECRETARY.

Hospital for Consumption and Diseases
OF THE CHEST, Brompton, S.W.3.

Applications are invited from registered medical practitioners (Male and Female), including those at present holding B1 posts, provided that the permission of their present employing authorities is given, for the appointment of RESIDENT SURGICAL OFFICER (B1). Applicants must have held a resident hospital appointment, and male R practitioners now holding A or B2 posts cannot be considered unless they have been rejected by the R.A.M.C. The appointment is for twelve months. Salary at the rate of £150 per annum, with board and residence, and an additional £25 per annum for services in connexion with paying patients.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of one or more recent testimonials, should reach the undersigned not later than Monday, 5th October, 1942.

Brompton, September, 1942. F. G. ROUVRAY, Secretary.

King George Hospital, Ilford.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE SURGEON (A), vacant on 1st October. Appointment will be for a period of six months. Salary is at the rate of £120 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent as soon as possible to—

G. AUSTIN HEPWORTH, Secretary and Superintendent.

Royal Sheffield Infirmary and Hospital.

Applications are invited from registered medical practitioners for the appointment of RESIDENT MEDICAL OFFICERS (A) at the Royal Hospital unit. Salary is at the rate of £80 per annum with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply, when appointment will be for six months.

Applications are also invited for FIRST ASSISTANT (B1) to M.S. HEAD CENTRE at Fulwood Annexe, Sheffield. Salary is at the rate of £350 per annum, resident. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply.

Applications to Secretary at Royal Hospital, Sheffield.

Appointment of Psychiatrist.

The services of a whole-time Psychiatrist are required for CHILD GUIDANCE CLINICS established in various districts within the COUNTY OF BERKSHIRE. Commencing salary £624 per annum (including cost-of-living bonus).

Intending candidates should submit their applications not later than the first post on Monday, 12th October, 1942; to the MEDICAL SUPERINTENDENT, Berkshire Mental Hospital, Wallingford, from whom further particulars of the appointment may be obtained.

Leeds Public Dispensary and
HOSPITAL.

Applications are invited from registered medical practitioners for the following resident posts, vacant about the middle of October:—

RESIDENT SURGICAL OFFICER (B1). Appointment for one year. Salary at the rate of £200 per annum, with residence, board, and laundry. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply.

Two HOUSE PHYSICIANS (A). Appointment for six months. Salary at the rate of £150 per annum, with residence, board, and laundry. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply.

Applications, stating age, nationality, and qualifications, and accompanied by three recent testimonials, to be sent immediately to: CHARLES F. J. MAURY, Secretary and Superintendent.

City of Liverpool.

Applications are invited for the appointment of a full-time ACTING DEPUTY MEDICAL SUPERINTENDENT (B1) (Resident, Male or Female) at the Alder Hey Children's Hospital (1020 beds), at a salary of £600 per annum, rising by annual increments of £50, to a maximum of £750 per annum, together with the usual residential allowances. Applicants should have had considerable experience since qualification, including some special experience of children's diseases. Possession of a higher qualification in medicine or paediatrics is desirable.

The person appointed will be required to assist the Medical Superintendent in the administration of the hospital, training of nurses, etc., and will deputise for the Medical Superintendent when required. Any fees in connection with the appointment to be handed over to the City Council.

R practitioners now holding A or B2 posts and rejected by the R.A.M.C. may also apply.

Applications should indicate position regarding liability for military service and state whether R practitioner, age, nationality, qualifications (with dates), experience and details of previous appointments, and be accompanied by copies of three recent testimonials.

Applications endorsed "Acting Deputy Medical Superintendent" should be returned to the undersigned so as to be received not later than 10 A.M. on Monday, 5th October, 1942.

Canvassing members of the City Council will be regarded as a disqualification. W. H. BAINES, Town Clerk.

Municipal Buildings, Dale Street, Liverpool, 2,
September, 1942.

Warrington Infirmary and Dispensary.

CLINICAL ASSISTANT TO THE EYE DEPARTMENT.

Applications are invited for the above post (for period of the war). Attendances required each day at the Hospital for a short period and also at one Out-patient Clinic. Salary £150, plus £50 travelling expenses, per annum.

Applications, stating age and experience in eye work, should be sent in immediately to—

HENRY L. BOOT, Superintendent and Secretary.

The Royal Hospital, Wolverhampton.
(Incorporated under Royal Charter.) (310 Beds.)

Applications are invited from registered medical practitioners for the post of RESIDENT ANÆSTHETIST (B2), vacant now. Salary at the rate of £200 per annum, with full residential emoluments. The appointment is for six months. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may also apply.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent immediately to—

18th September, 1942. W. H. HARPER, House Governor.

City of Birmingham.
DUDLEY ROAD AND SELLY OAK HOSPITALS.

Applications are invited from registered medical practitioners, Male and Female, for appointments as JUNIOR MEDICAL OFFICERS (A). The salary is at the rate of £200 per annum, plus residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply when appointments will be for six months; otherwise not exceeding twelve months.

Applications, stating age, nationality, and experience, and accompanied by copies of three recent testimonials, should be sent to the MEDICAL OFFICER OF HEALTH, Congreve-street, Birmingham, not later than the 30th September, 1942.

Royal Isle of Wight County Hospital,
RYDE, I.W.

Applications are invited from registered medical practitioners, either sex, for the appointment of a HOUSE SURGEON (B2), vacant on 12th October next. The appointment will be for six months. Salary at the rate of £180 a year, with board, residence, and laundry. As this is the senior post, previous surgical experience is advisable. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may also apply.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent without delay to—

A. S. GORDON, Secretary.

County Borough of Rotherham.

MEDICAL SERVICES COMMITTEE.

Applications are invited from fully registered medical practitioners for the appointment of TEMPORARY ASSISTANT MEDICAL OFFICER (B1) at the MUNICIPAL GENERAL HOSPITAL, Moorgate, Rotherham. The salary is £350 per annum, together with the usual emoluments. A temporary cost-of-living bonus amounting at the present time to 6s. 6d. per week has been granted by the Council but is subject to alteration or cancellation by the Council. The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, the Council's sick pay rules and regulations, and to one month's notice on either side. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply.

Forms of application, &c., may be obtained from the Medical Superintendent, Municipal General Hospital, Moorgate, Rotherham, and must be returned, endorsed "Assistant Medical Officer," not later than 8th October, 1942, to—

CHAS. L. DES FORGES, Town Clerk.

The Municipal Offices, Rotherham, 16th September, 1942.

Sir John Priestman, Durham County

AND SUNDERLAND EYE INFIRMARY.

Applications are invited for RESIDENT HOUSE SURGEON (B2) (Male or Female). The Infirmary is recognised by the Royal College of Surgeons as partial course of D.O.M.S. (60 Beds). Salary commencing at £200 per annum, with board, residence, and laundry, rising to £250 per annum after the period of one year. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may also apply when appointment will be limited to six months.

Applications, stating age and experience, together with copies of two recent testimonials, to be delivered to the SECRETARY, The Sir John Priestman, Durham County and Sunderland Eye Infirmary, Alexandra-road, Sunderland.

County Borough of Southampton.

APPOINTMENT OF ASSISTANT SCHOOL DENTIST.

Applications are invited from Dental Surgeons (Male or Female) for the above appointment. The successful candidate will be required to pass a medical examination, and to contribute to the Local Government and Other Officers' Superannuation Scheme. Salary £500 per annum.

Form of application may be obtained from the undersigned, to whom it should be returned, together with copies of three recent testimonials, as early as possible.

H. C. MAURICE WILLIAMS, Medical Officer of Health.

Civic Centre, Southampton, 16th September, 1942.

Grimsby and District Hospital.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of RESIDENT HOUSE PHYSICIAN (A), vacant on 12th October, 1942. Appointment for six months. Salary at the rate of £175 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply.

Applications, stating age, nationality, qualifications, and copies of recent testimonials, to the SECRETARY-SUPERINTENDENT.

17th September, 1942.

Scarborough Hospital.

(140 Beds.)

Applications are invited from registered medical practitioners (Female) for the posts of HOUSE SURGEON (A) and HOUSE PHYSICIAN (A). The appointments are for six months beginning 1st November, 1942. Salary at rate of £150 per annum, with board, residence, laundry, &c. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply.

Applications, with age, &c., and testimonials, to be presented to the HONORARY SECRETARY not later than 7th October, 1942.

Royal Salop Infirmary, Shrewsbury.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE SURGEON (A), vacant on 1st October, 1942. Appointment will be for six months. Salary is at the rate of £160 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply.

Applications, stating age, nationality, qualifications, and accompanied by copies of testimonials, to—

J. W. NOBLE, Secretary-Superintendent.

Board Room, 16th September, 1942.

York County Hospital.

(222 Beds.)

Applications are invited from registered medical practitioners for the appointment of a HOUSE SURGEON (B2), vacant 15th October, 1942. Salary is at the rate of £175 per annum, with full residential emoluments. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may also apply when appointment will be limited to six months.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent not later than 5th October, 1942, to—

J. R. MACKRILL, Secretary.

City of Plymouth.

ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from registered medical practitioners for the above whole-time temporary appointment, probably for the duration of the war. The salary scale is £500, rising by £25 annually to £700 per annum. Previous service on this salary scale, under another local authority, will be reckoned in calculating the appropriate salary of the officer appointed. All fees received by the officer must be refunded to the Council. Applicants should have had at least three years' post-graduate experience, and the D.P.H. will be considered as an additional qualification. The successful candidate will be required to act as Assistant Port Medical Officer, and the duties will also include general public health, tuberculosis, and venereal diseases work. The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, and terminable by three months' notice on either side, and the successful candidate will be required to pass a medical examination.

Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, should be sent as soon as possible and not later than 10th October, 1942, to—

T. PEIRSON, Medical Officer of Health.

Seven Trees, Lipson-road, Plymouth.

Surrey County Council.

PUBLIC HEALTH DEPARTMENT.

KINGSTON COUNTY HOSPITAL, Wolverton-avenue, KINGSTON-ON-THAMES. (550 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the position of ASSISTANT PHYSICIAN (B1). The position is tenable for the further duration of the war and is subject to one month's notice on each side. The commencing salary will be according to previous experience at a point on the grade £350–£25–£450 per annum, plus full residential emoluments. R practitioners now holding A or B2 posts and rejected by the R.A.M.C. may also apply.

Apply to the MEDICAL SUPERINTENDENT.

Surrey County Council.

PUBLIC HEALTH DEPARTMENT.

REDHILL COUNTY HOSPITAL, Earlswood Common, REDHILL. (450 Beds approx.)

Applications are invited from registered medical practitioners, Male and Female, for the position of RESIDENT ASSISTANT MEDICAL OFFICER (B2). The salary is at the rate of £250 per annum, plus full residential emoluments. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may also apply when appointment will be limited to six months; otherwise not exceeding one year.

Apply to the MEDICAL SUPERINTENDENT.

Swansea General and Eye Hospital.

Applications are invited from registered medical practitioners, Male and Female, for the appointments of HOUSE SURGEON (A), vacant early October. Appointments will be for 6 months. Salary is at the rate of £150 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply.

Applications, stating age, nationality, qualifications with dates, and accompanied by copies of three recent testimonials, should be forwarded to—

O. C. HOWELLS, Secretary-Superintendent.

City and County of Newcastle upon TYNE.

NEWCASTLE GENERAL HOSPITAL.

APPOINTMENT OF HOUSE PHYSICIANS (A) AND HOUSE SURGEONS (A)

Applications are invited from registered medical practitioners, Male and Female, for the above A posts vacant shortly. The appointments are tenable for a period of six months, and the salary is at the rate of £150 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of two recent testimonials, should be forwarded immediately to the MEDICAL OFFICER OF HEALTH, Health Department, Town Hall, Newcastle upon Tyne, 1.

Manchester Royal Infirmary.

Applications are invited from registered medical practitioners for the whole-time posts of SENIOR and JUNIOR ASSISTANT MEDICAL OFFICERS (B1) to the RADIOLOGICAL DEPARTMENT. Applicants must hold a radiological diploma. The appointments (non-resident) will be for twelve months, vacant early in November. Salary as Senior £500 per annum, and Junior £350 per annum. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply.

One copy of application, stating age, nationality, qualifications with dates, experience, and details of previous appointments, and accompanied by one copy of three recent testimonials, should be forwarded not later than Saturday, 10th October, 1942, to the undersigned. By Order,

F. J. CABLE, General Superintendent and Secretary.

City of Portsmouth.

SAINT MARY'S HOSPITAL. (1100 Beds.)

Applications are invited from Male registered medical practitioners for the following appointments, now vacant:—

SENIOR RESIDENT MEDICAL OFFICER (B1), limited to a period of two years. Applicants should have had at least two years' hospital experience and preference will be given to those having had some surgical experience. Salary at the rate of £350 per annum for the first year and £375 per annum for the second year. R practitioners now holding A or B2 posts and rejected by the R.A.M.C. may also apply.

JUNIOR RESIDENT MEDICAL OFFICER (A). Salary at the rate of £250 per annum. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply when appointment will be for six months; otherwise not exceeding twelve months.

In both cases the residential emoluments are valued at £125 per annum, with a temporary cost-of-living bonus according to the Whitley Council Scale, at present at the rate of 6s. 6d. per week, payable in addition to the salary.

Application forms may be obtained from, and must be returned to, the Medical Officer of Health, Northern Secondary School, Mayfield-road, Portsmouth.

F. J. SPARKS, Town Clerk.

Municipal Offices, Royal Beach Hotel, Southsea,
18th September, 1942.

Longton Hospital, Stoke-on-Trent.

(56 Beds.)

Applications are invited from registered medical practitioners for the appointment of a HOUSE SURGEON (A), as from 1st November, 1942. Salary is at the rate of £180 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply when appointment will be for six months.

Applications, stating age, qualifications with dates, and nationality, accompanied by copies of three recent testimonials, should be sent to: W. J. HOLLINSON, Secretary.

Longton Hospital, Stoke-on-Trent.

Victoria Hospital, Burnley.

(169 Beds.)

Applications are invited from registered medical practitioners (Male or Female) for the appointment of a HOUSE SURGEON (A), vacant on 18th October, 1942. Salary at the rate of £150 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply when appointment will be for six months; otherwise it may be extended.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent immediately to—

J. E. WHEATCROFT, Secretary.

The Radcliffe Infirmary, Oxford.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of RESIDENT MEDICAL OFFICER (B2) in that section of the Infirmary consisting of 82 Beds and dealing with the diagnosis and treatment of pulmonary tuberculosis, known as the OSLER PAVILION AND SUNNYSIDE, Headington, Oxford. The post will become vacant shortly after the 8th October. The appointment will be for a period of six months. The salary is at the rate of £120 per annum, with full residential emoluments. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may also apply.

Applications, stating age, nationality, qualifications with dates, and present post, together with copies of three recent testimonials, should be sent not later than Wednesday, the 7th October, 1942, to: A. G. E. SANCTUARY, Administrator.

Bristol Eye Hospital.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of RESIDENT OPHTHALMIC HOUSE SURGEON (B2). The salary is at the rate of £150 per annum, with full residential emoluments. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may also apply when appointment will be limited to six months.

Applications, stating age, qualifications with dates, nationality, and present post, accompanied by three recent testimonials, should be sent as soon as possible to—

D. M. BABER, Secretary and House Governor.

Burton-on-Trent General Infirmary.

Applications are invited from registered medical practitioners (Male) for the appointment of CASUALTY OFFICER AND HOUSE PHYSICIAN (A). Salary at the rate of £150 per annum, with usual emoluments. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply when appointment will be for six months.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, to be sent to—

E. W. THORNLEY, Superintendent and Secretary.

Northamptonshire County Council.

Applications are invited from registered medical practitioners with experience in modern methods of diagnosis and treatment of tuberculosis for the appointment of TEMPORARY ASSISTANT TUBERCULOSIS OFFICER AND ASSISTANT RESIDENT MEDICAL OFFICER at RUSHDEN HOUSE SANATORIUM, comprising 70 Beds for adult male and female patients, together with a treatment block. An unfurnished house is available for occupation by a married officer. A single officer will be required to arrange to reside near the Sanatorium. The salary will be on the scale of £500 per annum, rising by increments of £25 per annum to £700 per annum, but the initial salary may be fixed according to the experience of the candidate appointed at a higher figure, but not exceeding £600 per annum. A deduction of £40 per annum will be made if the house is occupied. Travelling expenses will be paid on the scale approved by the Council. The officer will be required to devote his whole time to the duties of the office and to discharge, under the direction of the County Medical Officer of Health and the supervision of the Tuberculosis Officer and the Medical Superintendent, the routine medical duties of the Sanatorium and such other duties in connexion with the tuberculosis scheme as the Council may assign to him. The appointment, which will in no case be for a period longer than the duration of the war or such period thereafter as may elapse before the permanent officer returns to duty from war service, will be determinable by three months' notice on either side.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, should reach the undersigned not later than the 14th October, 1942. J. ALAN TURNER, Clerk of the County Council.

County Hall, Northampton.

Hampshire County Council.

COUNTY COUNCIL HOSPITAL, Clayhall-road,
ALVERSTOKE, GOSPORT. (60 Beds.)

Applications are invited from registered medical practitioners for the appointment of RESIDENT SURGICAL OFFICER (B1), now vacant. Applicants should have held house appointments and had surgical experience. Preference will be given to candidates holding diploma of F.R.C.S. Salary is at the rate of £550 per annum, with one month's notice on either side. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments, and accompanied by copies of three recent testimonials, should be sent not later than Monday, 5th October, 1942, to—

H. LESLIE CRONK, County Medical Officer.

The Castle, Winchester.

Preston and County of Lancaster

ROYAL INFIRMARY.

The Board of Management invite applications from registered medical practitioners for the following posts:—

HOUSE PHYSICIAN (A). Approved for the purpose of M.D. (Lond.), Branch I. Vacant shortly.

HOUSE SURGEON (A) to EYE, EAR, NOSE, AND THROAT DEPARTMENT. Approval for purpose of D.O.M.S. and D.L.O. pending. Vacant 15th October.

The above appointments will be for six months and the salary in each case at the rate of £150 per annum, with the usual residential allowances. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply.

Applications, stating age, nationality, and qualifications, together with copy testimonials, should be forwarded to—

JOHN GIBSON, Superintendent and Secretary.

Royal Infirmary, Preston, 21st September, 1942.

Leicester Royal Infirmary.

There will shortly be a vacancy for the post of RADIOTHERAPIST. The Hospital is recognised by the Radium Commission as a regional centre and possesses 600 mgm. of radium. Treatment plant includes 3/200 kv. deep therapy tubes and one contact therapy apparatus. The appointment (for a period of twelve months) is a full-time one and is open to practitioners (Male or Female) holding a radiological diploma. The salary offered is £500 per annum and a percentage of fees received from private cases treated at the Infirmary, with a minimum of £100. Although the post is primarily a therapeutic one, the successful candidate will be expected to give assistance on the diagnostic side of the department.

Applications should be addressed to the HOUSE GOVERNOR AND SECRETARY, from whom further particulars may be obtained.

10th September, 1942.

City of Leeds.

PUBLIC HEALTH DEPARTMENT.
KILLINGBECK HOSPITAL FOR INFECTIOUS DISEASES.

Applications are invited from registered medical practitioners (Male and Female) for the post of TEMPORARY SENIOR ASSISTANT MEDICAL OFFICER (B1), at present vacant. Candidates should have had experience in infectious diseases. Salary is at the rate of £350 per annum, together with cost-of-living bonus and full residential emoluments. Practitioners now holding A or B2 posts and rejected by the R.A.M.C. may also apply.

Applications should be sent to the ACTING MEDICAL SUPERINTENDENT, Leeds City Hospital, Killingbeck, Leeds.

City of Salford.

HOPE HOSPITAL.

Applications are invited from registered medical practitioners (Male and Female) for the appointment of TEMPORARY RESIDENT OBSTETRICAL OFFICER (B1), now vacant. The appointment will probably be for the duration of the war. Applicants should have held house appointments and have had experience in obstetrics and gynæcology. Preference will be given to candidates holding the M.R.C.O.G. The salary is at the rate of £450 per annum, plus a cost-of-living bonus, with full residential emoluments. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply.

Form of application and particulars of appointment may be obtained from the Medical Officer of Health, 143, Regent-road, Salford, 5, by whom applications must be received not later than 3rd October, 1942. H. H. TOMSON, Town Clerk.

Surrey County Council.

PUBLIC HEALTH DEPARTMENT.

EPSOM COUNTY HOSPITAL, Dorking-road, EPSOM. (350 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of RESIDENT ASSISTANT OBSTETRICIAN (B1) to the MATERNITY UNIT of 54 Beds. The appointment, which is normally tenable for five years, will be available for the further duration of the war, and may be extended thereafter to a total period of five years. The position is subject to one month's notice on either side. Commencing salary according to experience at a point on the grade £350–£25–£450 per annum, plus full residential emoluments. R practitioners now holding A or B2 posts and rejected by the R.A.M.C. may also apply.

Application to the MEDICAL SUPERINTENDENT.

Essex County Council.

TEMPORARY APPOINTMENT OF ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

The County Council invite applications for the above-mentioned temporary appointment from registered medical practitioners. The salary attaching to the appointment will be at the rate of £500 a year, rising, subject to satisfactory conduct and service, by annual increments of £25 to £700 a year, but the commencing salary may be varied having regard to the experience and capabilities of the candidate appointed.

Applications must be on the prescribed form, obtainable from the undersigned. Last date for receipt of applications 9th October, 1942.

Canvassing, whether directly or indirectly, is forbidden.

JOHN E. LIGHTBURN, Clerk of the County Council.

County Hall, Chelmsford, 11th September, 1942.

Oldchurch County Hospital, Romford.

The Council of the Administrative County of Essex invite applications from registered medical practitioners for the appointment of an ORTHOPÆDIC SURGEON at the above Hospital (968 Beds). Applicants must possess one of the higher surgical qualifications and have had extensive experience in fracture work and orthopædics. The post is non-resident and the salary at the rate of £750 a year, rising, subject to satisfactory service, by annual increments of £50 to £1000 a year.

Applications, accompanied by copies of not more than three recent testimonials, should reach me not later than 5th October, 1942. Canvassing, whether directly or indirectly, is forbidden.

JOHN E. LIGHTBURN, Clerk of the County Council.

County Hall, Chelmsford, 7th September, 1942.

Coventry and Warwickshire Hospital.

Applications are invited from registered medical practitioners for the appointment of RESIDENT SURGICAL REGISTRAR (B1), vacant immediately. Applicants should have held house appointments and had surgical experience. Preference will be given to candidates holding diploma of F.R.C.S. Salary is at the rate of £500 per annum, together with full residential emoluments. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments, and accompanied by copies of three recent testimonials, should be sent to the HOUSE GOVERNOR AND SECRETARY, Coventry and Warwickshire Hospital, Coventry.

City and County of Newcastle upon TYNE.

SHOTLEY BRIDGE HOSPITAL. (900 Beds.)

APPOINTMENT OF HOUSE PHYSICIAN (B2) TO THE PSYCHIATRIC DEPARTMENT (160 Beds).

Applications are invited from registered medical practitioners, Male or Female, for the above post, vacant on the 1st October. The appointment is tenable for six months and the salary is at the rate of £250 per annum, together with full residential emoluments. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may also apply.

Applications, stating age, nationality, qualifications, and accompanied by copies of testimonials, to the MEDICAL SUPERINTENDENT.

Holland (Lincs) County Council.

Applications are invited from registered medical practitioners for the temporary whole-time appointment of ASSISTANT MEDICAL OFFICER OF HEALTH (Male or Female). The officer appointed will be employed on general duties, including school inspections and welfare centres in connexion with the work of the Health Department, and will act as R.M.O. of an E.M.S. Hospital (70 Beds), including a maternity unit of 10 Beds, under the direction of the Medical Officer of Health. The appointment is subject to one month's notice on either side. Salary will be at the rate of £600 per annum, and car allowance will be paid on the Council's scale. £100 is deducted from salary for board and residence.

Applications, together with copies of three recent testimonials, should be sent to the Medical Officer of Health, County Hall, Boston, Lincs, on or before Wednesday, 7th October, 1942. H. C. MARRIS, Clerk of the County Council.

County Hall, Boston, Lincs, 11th September, 1942.

City of Birmingham.

PUBLIC HEALTH DEPARTMENT.

A WOMAN MEDICAL OFFICER is required for the duration of the war, duties to commence as soon as possible. Applications are invited from medical women with special experience in pædiatrics. The work includes attendance at antenatal and children's clinics and at children's institutions. The salary scale is £500 per annum, rising by £25 annually to £700 per annum, with war bonus. The commencing salary within that scale depends on the medical officer's experience.

Applications, endorsed "Temporary Medical Officer for Maternity and Child Welfare," and accompanied by copies of three recent testimonials, to be made on a form obtainable from the MEDICAL OFFICER OF HEALTH, Council House, Birmingham, 3, and returned to him on or before 30th September.

Southport General Infirmary.

(267 Beds.)

Whole-time SURGICAL OFFICER (B1) (Temporary) required primarily to perform the duties of members of the surgical staff serving with His Majesty's Forces. Salary £560 per annum resident, or £700 per annum non-resident. Candidates must have a higher surgical degree or diploma, recent experience in major surgery, and should be exempt from military service. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply.

Applications, with copies of three recent testimonials, should be forwarded to the SUPERINTENDENT AND SECRETARY, The Southport General Infirmary, Southport, Lancashire, not later than Saturday, 3rd October, 1942, from whom further particulars may be obtained.

Royal East Sussex Hospital, Hastings.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE SURGEON (A), vacant on the 1st October, 1942. Salary is at the rate of £150 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply when appointment will be for six months; otherwise it will be for at least six months.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to—

WILFRED G. KEMSLEY, Secretary and House Governor.

Bedford County Hospital.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE SURGEON (A), vacant approximately the 1st October, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be limited to six months. The salary is at the rate of £150 per annum, with full residential emoluments.

Applications, stating age, nationality, qualifications, and accompanied by copies of testimonials, to the SECRETARY.

Norfolk and Norwich Hospital,

NORWICH.

Applications are invited from registered medical practitioners (Male) for the appointment of CASUALTY OFFICER (B2). Salary at the rate of £170 per annum, with full residential emoluments. Practitioners qualified more than three months, liable under the National Service Acts, 1939–41, and rejected by the R.A.M.C. may also apply when appointment will be limited to six months.

Applications should be sent as soon as possible to—

FRANK INCH, House Governor and Secretary.

Bracebridge Heath Mental Hospital,

BRACEBRIDGE HEATH, Near LINCOLN.

TEMPORARY ASSISTANT MEDICAL OFFICER (B1).

Applications are invited from registered medical practitioners (Male or Female) for the above (whole-time) appointment as from 1st October next. R practitioners should not apply. Salary £8 8s. per week, with the usual residential emoluments. Additional £50 per annum if holder of the D.P.M. (Eng.).

Apply, with copies of testimonials, to the MEDICAL SUPERINTENDENT.

PUBLISHED by the PROPRIETORS, THE LANCET LIMITED, 7, Adam Street, Adelphi, in the County of London.
Editorial Office Address, 26, Temple Street, Aylesbury, Bucks (Aylesbury 315).
Printed by HAZELL, WATSON & VINEY, LTD., London and Aylesbury—Saturday, September 26, 1942.
PRINTED IN GREAT BRITAIN—Entered as Second Class at the New York, U.S.A., Office.

The Children's Hospital, Sheffield
(INC.) (157 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of HOUSE SURGEON (A) vacant 1st October, including practitioners within three months of qualification and liable under the National Service Acts 1939–41, when the appointment will be for a period of six months. Salary is at the rate of £100 per annum with full residential emoluments.

Applications, stating age, nationality, qualifications, and accompanied by copies of three recent testimonials should be sent to the undersigned.

The successful applicant must be a member of a Medical Defence Society.

T. H. G. GARTLAND, Superintendent and Secretary.

Northampton General Hospital.
(405 Beds.)

Applications are invited immediately from registered medical practitioners for the post of HOUSE SURGEON (A) to the EAR, NOSE, AND THROAT DEPARTMENT, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for six months. Salary at the rate of £150 per annum, with board, residence, and laundry.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent as soon as possible to—

GORDON S. STURTRIDGE, M.B., B.S., Superintendent.

4th September, 1942.

West Cornwall Hospital, Penzance.
(184 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE SURGEON (A), now vacant, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for six months. Salary is at the rate of £150 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to—

K. I. NEWELL, Secretary-Superintendent.

York Dispensary.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (Male or Female), to commence duties as soon as possible. The duties consist chiefly in visiting and attending the sick poor in their own homes and in assisting the Honorary Medical Staff. Candidates must be duly qualified, registered, and unmarried. Experience in the administration of anæsthetics is essential. Salary £250 per annum, with board, lodging, and laundry. There is a substantial car allowance should the successful applicant be possessed of, and wish to use, his or her own car.

Applications, with testimonials, to be sent to—

JOHN C. PETERS, Secretary,

4, New-street, York, 8th September, 1942.

Bootle General Hospital, Bootle,
LIVERPOOL, 20.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE SURGEON (A) to the SPECIAL DEPARTMENTS (Orthopædic; Fracture; Ear, Nose, and Throat, &c.), vacant on the 1st October, 1942. Salary is at the rate of £150 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply when appointment will be for six months; otherwise it will be for six months with possibility of extension.

Applications and testimonials should be sent to the SUPERINTENDENT.

The Royal Portsmouth Hospital,
PORTSMOUTH.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of RESIDENT SURGICAL OFFICER (B1), vacant on 23rd October, 1942. Applicants should have held house appointments and had surgical experience. Preference will be given to candidates holding diploma of F.R.C.S. Salary is at the rate of £300 per annum, with full residential emoluments. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of testimonials, should be sent as soon as possible to: B. WAGSTAFF, Secretary.

Doncaster Royal Infirmary.

Applications are invited from registered medical practitioners for the appointment of RESIDENT SURGICAL OFFICER (B1). Applicants must be unmarried and have had previous surgical experience. Salary will be at the rate of £250 per annum, rising by half-yearly increments of £25. R practitioners holding A or B2 posts may also apply.

Applications, stating age, nationality, qualifications with dates, and experience and details of previous appointments, accompanied by copies of not more than three testimonials, to be sent immediately to—

R. LANCASTER, Secretary-Superintendent.

Hull Royal Infirmary.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of CASUALTY OFFICER (A), vacant November. Applicants may include practitioners within three months of qualification and liable under the National Service Acts, 1939-41, when appointment will be for six months. Salary is at the rate of £200 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of recent testimonials, should be addressed to: R. J. CARLESS, House Governor.

The Glasgow Royal Mental Hospital.

SENIOR ASSISTANT PHYSICIAN (B1) wanted for the duration of the war. Salary £550 per annum, with full board, lodging, and laundry. R practitioners holding A or B2 posts and rejected by the R.A.M.C., and with the approval of the Scottish Central Medical War Committee, may also apply.

Particulars of the appointment can be obtained from the PHYSICIAN-SUPERINTENDENT, to whom application should be addressed.

County Borough of Middlesbrough.
HEALTH DEPARTMENT.
WEST-LANE ISOLATION HOSPITAL.

APPOINTMENT OF RESIDENT MEDICAL OFFICER (B1).

Applications are invited from registered medical practitioners for the above post. Experience is afforded in the post for all forms of infectious diseases and tuberculosis. The appointment is for the duration of the war. The successful applicant will also be required to undertake duties in infant welfare clinics and any other additional duties in the Health Department which may be required by the Medical Officer of Health. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may also apply. The salary is at the rate of £350 per annum, rising by annual increments of £25 to a maximum of £450, plus the usual residential emoluments. The appointment is subject to the Council's Staff Regulations and will be terminable by one month's notice on either side.

Applications should be endorsed "Resident Medical Officer," and sent to the Medical Officer of Health, Municipal Buildings, Middlesbrough, on or before the 12th October, 1942.

PRESTON KITCHEN, Town Clerk.

Municipal Buildings, Middlesbrough, 18th September, 1942.

Rotherham Hospital.

Applications are invited from registered medical practitioners (Male) for the appointment of a SECOND CASUALTY OFFICER AND HOUSE SURGEON (A) to the OPHTHALMIC AND E.N.T. DEPARTMENTS, vacant now. Salary £200 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may also apply when appointment will be for six months.

Applications, stating age, qualifications with dates, and nationality, accompanied by copies of three recent testimonials, should be sent to: T. H. FLETCHER, Secretary-Superintendent.

Appointment of Works Medical Officer
TO IMPORTANT INDUSTRIAL CONCERN.

Applications are invited from Male registered medical practitioners for the position of Works Medical Officer for a large Works in the West of England. Preference will be given to applicants between thirty-five and fifty years of age and previous experience in a similar capacity is desirable. The appointment is for whole-time service and private practice will not be permitted. Remuneration will be at the rate of approximately £800 per annum, depending upon qualifications and experience.

Applications in writing, giving full details of qualifications and experience, should be forwarded to Address, No. 925, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Applications are invited for part-time
appointment of FEMALE MEDICAL OFFICER to Midlands firm. Salary £350–£400 per annum, all found. Duties light.—Write full particulars, A. SHAW, Medical Transfer Agency, Premier Buildings, 88, Church-street, Liverpool, 1.

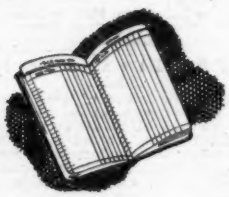
Full-time Assistant, Male or Female,
British, for Practice in Wembley. Live out; preferably own car. Good salary to suitable applicant.—Address, No. 924, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Northern Ireland: Medical Practice
(mixed), death vacancy. Seaside town, twenty miles Belfast. Excellent hospital facilities. Unfurnished house to rent.—Full particulars from Messrs. BOAL, ANDERSON & CO., Solicitors, Ballymena. Phone 408.

MSS. (Books) required on every aspect
of Science. Assured market. Submit to the SCIENTIFIC BOOK CLUB, 121, Charing Cross-road, W.C.2.

Private Home for Early Mental
ILLNESS, ideally situated on the Helford River, receives a limited number of patients for care and active treatment. Special department for Insulin Therapy.—Illustrated brochure from RESIDENT PHYSICIAN, Trenython, Mawnan Smith, Cornwall. Telephone: Mawnan Smith 276.

The
Wellcome Medical Diary
for 1943



We are glad to be able to announce that there will be a 1943 edition of the Wellcome Medical Diary. Production is now well advanced despite considerable difficulties and it is hoped to distribute copies during the latter half of November.

Owing to the shortage of paper supplies we regret that we shall be compelled to confine the distribution of the diary to those medical men who sent us, as requested, the Order Form post-card from their copy of the 1942 edition.

BURROUGHS WELLCOME & CO

(The Wellcome Foundation Ltd)

LONDON

Associated Houses: NEW YORK · MONTREAL · SYDNEY · CAPE TOWN · BOMBAY · SHANGHAI · BUENOS AIRES